The MINING CONGRESS JOURNAL

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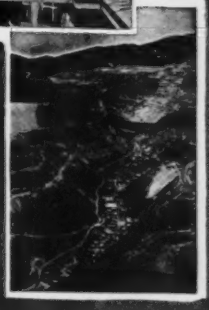

In This Issue

Tariff Relations of America and Europe

The Case for Anthracite Coal

Standardization of Mine Drainage

President Coolidge's Message to Congress

Immigration Restrictions Under Quota Law

Legislative Review

Redraft of Revenue Act Before Congress

The Years Roll By
But I Roll On

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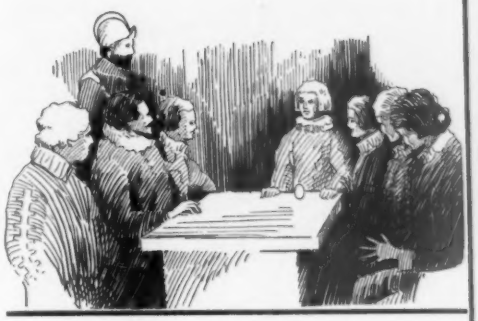

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Page

Editorials

The Struggle Impends 1
The Board of Tax Appeals 2
The Tax Practice 2
The Senate Deadlock 2
The Obligation Exists 3
Railroad Efficiency 3

Feature Articles

The Tariff Relations of America and Europe—By A. Cressy Morrison 24
The Coal Reserves and Taxes—By Geo. H. Cushing..... 31
The Case for Anthracite Coal—By S. D. Warriner..... 33
Standardization of Coal Mine Drainage—By J. H. Edwards 42
Mine Water and Its Treatment—By J. R. Campbell..... 43
Standardization of Mine Drainage—By John W. Hallock 46
Metals Used in Mine Pumps—By G. A. Drysdale..... 47
What Standardization of Mine Pumps Means to Owners and Operators—By F. L. Atwood 51

News

President Coolidge's Message to Congress..... 4
Immigration Restriction Under Dillingham Quota Law.. 6
National Immigration Conference 8
Gold and Silver Inquiry Commission Hearings..... 10
Wage Agreement Decision 10
Principles of Industrial Cooperation Outlined..... 11
Interstate Commerce Report Reviews Rail Situation..... 12
Legislative Review 14
Mine Investigation Funds 26
Standards for Compressed Air 26

Page

Tariff Association Meets 27
Call for Meeting Colorado Metal Mining Assn. 28
Call for Sixth Annual Meeting Colorado Chapter American Mining Congress 28
Redraft of Revenue Act Submitted to Congress..... 29
Wealth, Public Debt and Taxation 30
Mining Course Now Open 30
The 1924 Convention 32
Mining Activities of the Geological Survey 35
Revenue Bureau and Tax Board Report on Progress..... 36
Oil Production Wanes 38
Mining in Alaska in 1923 39
Coal Possibilities in Polar Region 41
Current Oil Shale Notes 42
Status of War Mineral Claims 46
Industrial Prosperity Seems Assured 49
The Public Right in Coal 50
Titanium Better Than Silicon for Rail Steel..... 51
Patents 52

Illustrations

United States Treasury ..... Insert
Coolidge, Calvin 4
Pennsylvania Avenue 5
Immigrants at Ellis Island 6
House of Representatives 14
Senate Mines and Mining Committee 17
Senate Immigration Committee 19
Morrison, A. Cressy 24
Green, The Hon. Wm. R. 29
Warriner, Saml. D. 34
Internal Revenue Department 36
Alaska 39

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1907

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AND

THE
MINING CONGRESS
JOURNAL

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1924

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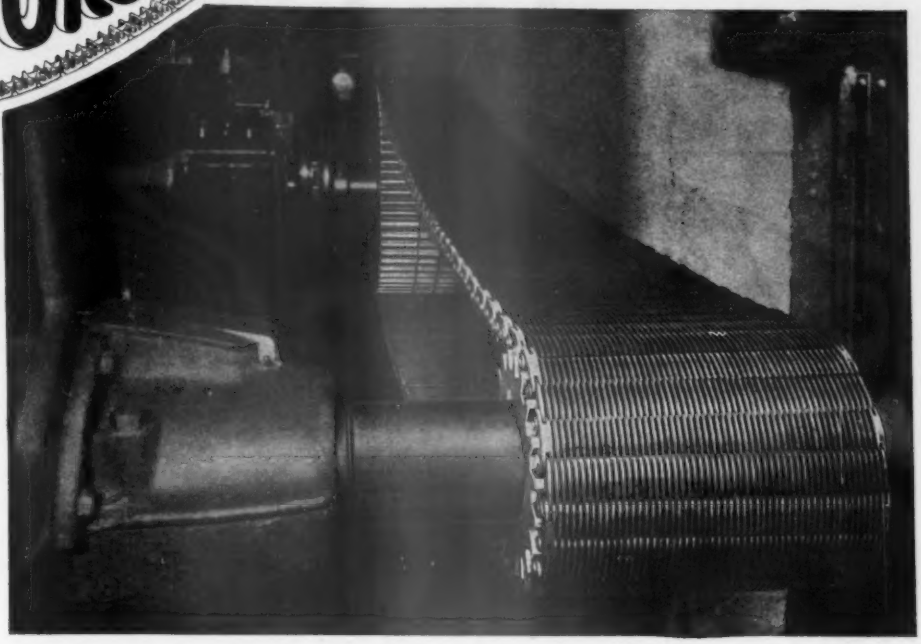

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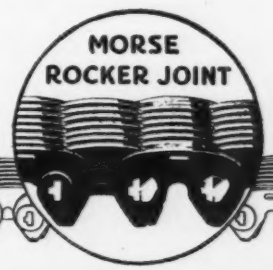

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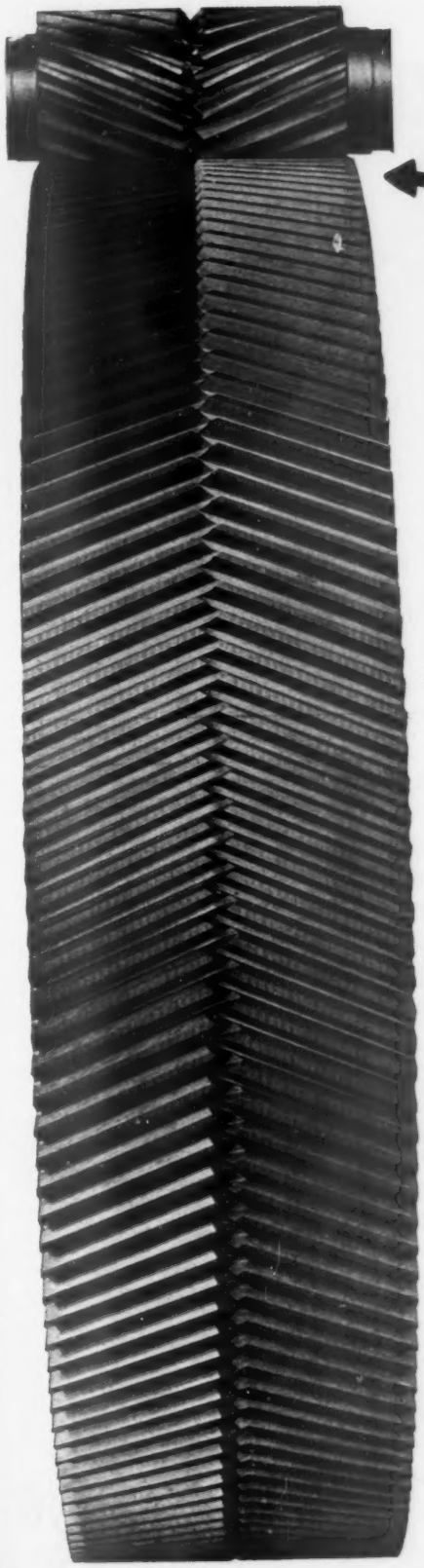

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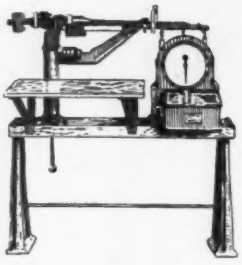

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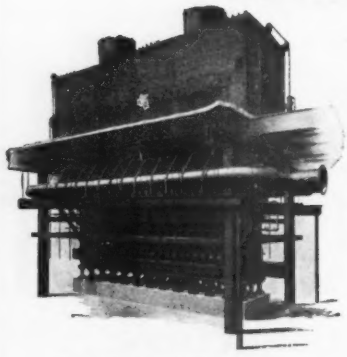

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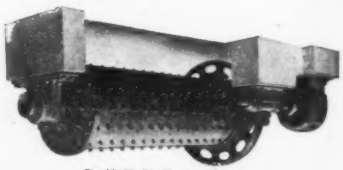

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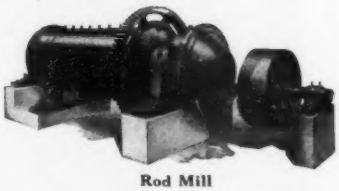

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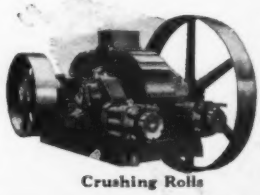

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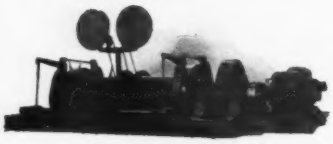

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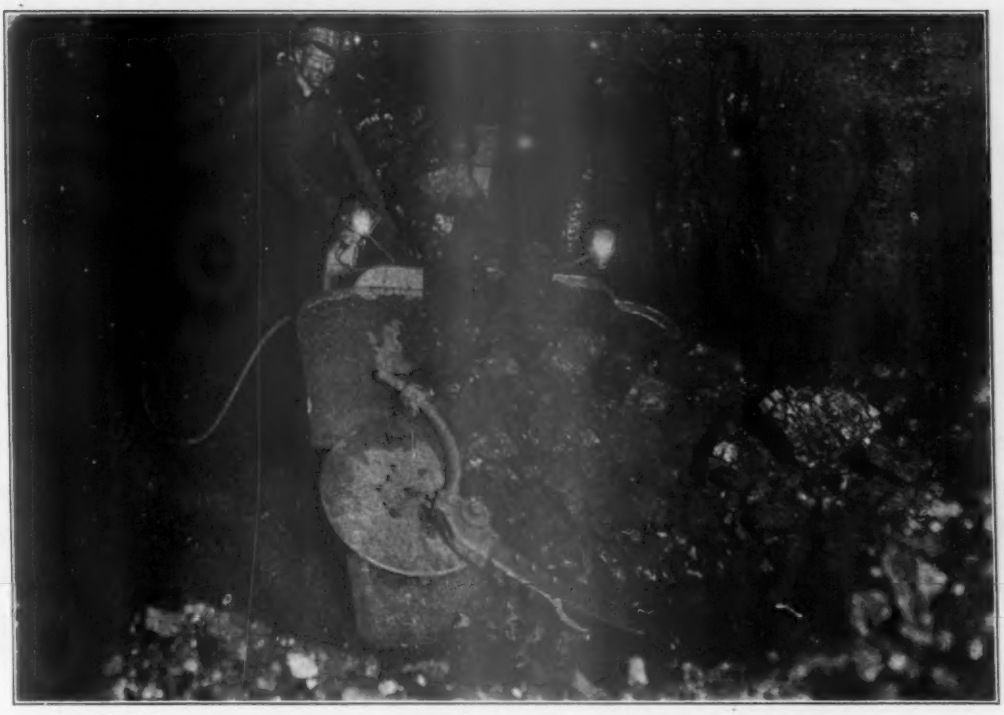

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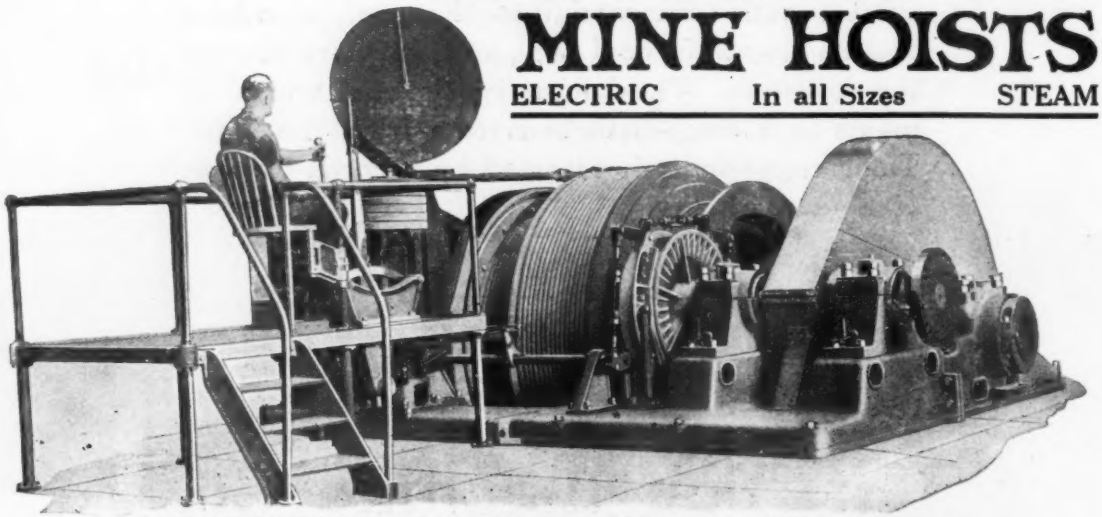

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Second—Intelligent conservation with a view to the highest utilization and the prevention of waste of mineral resources.

Third—The protection of mining investors against fraud and misrepresentation; the stimulation of investment in real mining and to demonstrate that mining is a business and not a gamble.

Fourth—Uniformity in state laws governing mining operations carried on under like conditions.

Fifth—Such federal cooperation through research and investigation as will solve those problems of production, treatment and transportation which are essential to the highest development of the Mining Industry.

Sixth—A solution of the economic problems underlying the coal industry.

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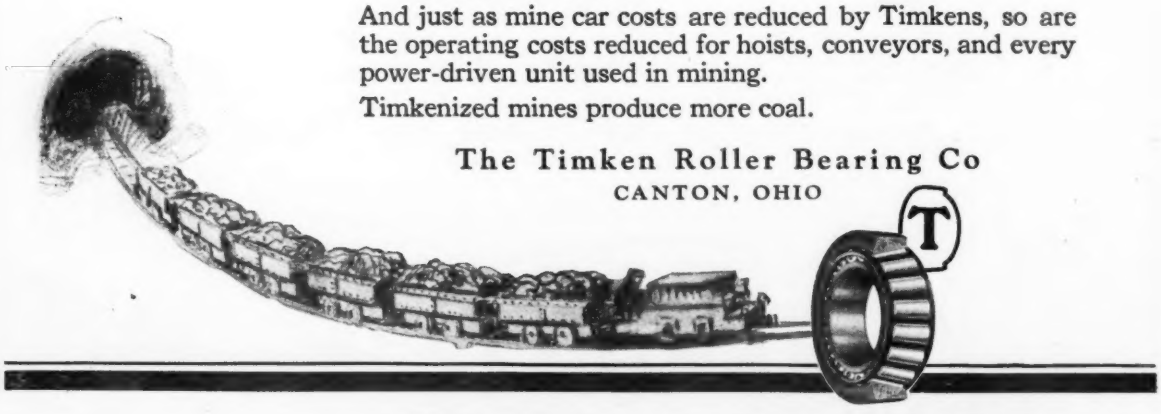

TIMKEN
Tapered
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The
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The Struggle Impends

WITH the first of the year at hand, we face the distressing fact that, soon, the country will be faced by the question whether another strike of the bituminous coal miners will have to be endured. While the issues in what will soon be a national question have not been defined, it is possible to state and to consider the essential facts.

In attempting to state precisely how much of a gain has been made by the miners in ten years the United States Coal Commission assumed that the 1913 wage scale was normal. In that year the coal miners and operators had made their own bargains in a time of peace and without being unduly influenced by any governmental body. Therefore, the commission took the 1913 wage scale as the point from which to measure the war rise in earnings. It assumed that Indiana was the mean of the bituminous field; therefore it took the 1913 Indiana scale as 100 and added all subsequent increases to that base. It considered the 1913 scale in anthracite to represent normal and expressed it as 100. It found that, before the last advance to the anthracite miners, the index figure for that field was 176. The index figure for Indiana is now 177.

By the last increase to the anthracite miners, the index figure for that field has been advanced to 194. If Indiana and anthracite miners are to fare alike, it is now indicated that the bituminous wage scale should be brought up to the point where the Indiana index figure will be at least 194.

Before the last anthracite wage advance it was obvious that the average wage of all anthracite miners ranged between 2,100 and 2,300 per year. It is curious that the average wage for the bituminous workers—all classes of labor included—was about the same. By the last advance to the anthracite miners the average annual earnings of those men has of course been materially increased—jumped up 10 percent in fact. The bituminous miners will demand, of course, that they shall fare equally with their bituminous brethren.

On the other hand, the wages of other workers in the country are not now on the basis of the bituminous miners—$7.50 per day as a minimum for unskilled work. The wage for other unskilled work has dropped down, on the average, to about half that of the miners. The other workers have, with their smaller earnings, to buy coal at the price suggested by the miners' wages. This brings to the fore the fact that the miners, both in annual income and in daily wage are faring far better than the other workers of the country.

Because one group of the miners have, by being able to win the favor of the governor of one state, been able to advance their wages unduly, is no sufficient reason why the wage schedule of the whole coal industry should be brought up to that level. It is far too much to ask of the consumers that coal scales should be fixed by comparison with scales in vogue in a few of the mines rather than in comparison with those being paid elsewhere.

On the other side of this question we have these facts to consider. The operators cannot fight off the impending vigorous approaches of the miners without money with which to pay the cost of a long suspension and without that public support which will accept, without complaint a coal shortage rather than surrender a principle. The operators, it must be remembered, lost money heavily as a result of the strike of 1922. The market which followed that strike was in no sense strong. Prices, naturally, would not have risen to any extraordinary heights even without artificial restraint. However, even the slight upturn of prices was checked by government regulation. This prevented any recovery of the money lost during the strike. This was followed immediately by a soft market which has endured until now. During this long siege of a dull market the operators have lost money steadily. Having, in this way, dissipated their capital, the operators clearly are not financed to stand the long suspension which the bitterness of the forthcoming struggle suggests.

And, as to getting any lively support from the public, that seems to be wholly out of question. The people have, until just recently, been strong partisans of the union. In all previous wage settlements, public sentiment favored the union. The people have learned, now, to distrust it. However, they have not yet learned to discredit it. That is one big factor. Another is that during the time this great struggle with the miners would normally be in progress, the people will have turned their attention to political action. Their thoughts will be on electing a President. They will have scant time for sober economics. It is almost impossible to suppose that the people will in such a time give to the operators much support.

Because the operators lack money and will likely lack the support of the public, it is entirely possible that the miners may succeed in making further inroads upon the public purse through the selling price of coal. The situation is unfortunate. It will, however, remain in that unsatisfactory condition until the people learn that they cannot demand a wage increase for the miners and at the same time get a reduced price for coal. Their prices will follow, directly, their own recommendations as to what the operators shall pay their men.

THE BOARD OF TAX APPEALS

SECRETARY of the Treasury Mellon has recommended the creation of a Board of Tax Appeals to hear all appeals from the Assessment of additional income and estate taxes. This Board, if established, would be independent of the Commissioner of Internal Revenue. According to Secretary Mellon's plan, it would sit locally in the various judicial circuits throughout the country, and the practice before it would be similar to that before the Interstate Commerce Commission.

The American Mining Congress has advocated the creation of such a board since 1920. One of the weaknesses of the present system of handling appealed cases before the Bureau of Internal Revenue is that it is very difficult for revenue officials who are charged primarily with the protection of the interests of the government to be fair judges in a controversy between the government and a taxpayer. Another weakness of the present system is that there is no means of correcting promptly an arbitrary or erroneous decision. The proposed Board of Tax Appeals will be judicial in nature and will not be embarrassed by having to perform the double function of (1) judge, and (2) advocate for one of the parties.

But such a board will not be wholly satisfactory unless it functions in a broad and wise spirit. It should be ready to cut through excessive red tape and technicality in order to take any necessary action that will terminate a case to the reasonable satisfaction of both parties. Prompt reversal of arbitrary decisions on the part of the income tax unit, especially decisions that are based upon presumptions and arbitrary technical considerations, should tend to make administrative officers who are charged with administration of the tax law more willing to reach a proper result by resolving doubtful isues in favor of the taxpayer where gross injustice might otherwise obtain.

The personnel of such a board should be carefully selected. It would be better from the standpoint of public confidence not to have the board predominantly composed of men who have formerly represented the government. There is always danger that a member appointed from the revenue department would come to the tribunal with a bias in favor of the government. The remuneration offered should be sufficient to induce men of large caliber to become members.

The difficulties which taxpayers have encountered during recent years in securing final adjustment of their tax returns and claims have been almost insurmountable. Liquid assets have been tied up for years pending adjustment of tax liabilities, and this has been a severe strain upon the business of the country. Business men have been reluctant to expand their enterprises or engage in new undertakings with the possibility of large additional assessments overshadowing them. If the Board of Tax Appeals is made to function in such a manner as to give prompt disinterested review of disputed claims, it will be a boon to both taxpayers and government.

THE TAX PRACTICE

THE primary aim of those engaged in the tax practice before the Bureau of Internal Revenue and its various units should be to develop proper conceptions of the provisions of the revenue law and proper methods of accounting which will enable taxpayers to make correct returns of their income. The tax practitioner who shows his clients how to avoid trouble in the adjustment of their tax returns will continue in business at a fair profit long after the fly-by-night practitioner, who seeks the "cream" and the "velvet" from the war-time tax claims, and who acquiesces in the application of a wrong principle to serve his purposes today, although the precedent thus established may harm the taxpayer tomorrow, has ceased to function as such.

The delay in settlement of war-time cases has presented a vast problem to the Government, and has been a source of great annoyance to taxpayers. The extent of the problem may be understood from the fact that during the fiscal year ended June 30, 1923, a total of $460,818,000 in additional taxes was assessed while 88,769 claims were adjusted involving the refund, credit or abatement of $440,173,000.

Although the total amount of additional taxes assessed annually is enormous, more than 60 percent of such assessments are erroneous and are due to incomplete tax returns or inadequate information furnished by taxpayers. Taxpayers need the services of specialists who can show them how to avoid trouble by making correct returns and supplying correct information. It is not enough for the practitioner to help a taxpayer out of trouble after he becomes involved in difficulty with the department.

The tax specialist, if he is to remain permanently in the business, must conscientiously direct the taxpayer's steps along correct principles, even though to do so may destroy his prospects for future fees of tempting proportions. Taxpayers are beginning to demand just such service, and those engaged in the tax practice who are not competent to render such service soon will be eliminated from the field.

THE SENATE DEADLOCK

THE failure of the Senate to select a chairman for the Interstate Commerce Committee of that body reveals a deplorable state of discord among members of the Senate over railroad legislation. One group favors additional legislation to promote consolidation of the railroads. Another group favors legislation repealing the present provisions of the Transportation Act pertaining to consolidation. Still another group favors additional legislation which will prevent the adoption of the tentative valuations fixed by the Interstate Commerce Commission for rate-making purposes. Others favor legislation to compel revision of the rate structure, to abolish the labor board, to use current market values of railroad securities to get the rate base, and to provide for various forms of Government control over railroad operations.

The result of this diversity of opinion in the Senate as to what should be done or should not be done with the railroads probably will be that nothing will be done by this Congress one way or the other. There is a general feeling prevalent among business men and shippers that the Transportation Act should be given a full and fair trial before further railroad legislation is enacted. If the deadlock in the Senate should effectively prevent tampering with the present act, this result would be satisfactory to most of the country. The railroads are doing very well at the present time in providing improved facilities to meet the growing transportation needs of the country, and any drastic change in the law might seriously interfere with their present efforts. If the Transportation Act needs to be changed, it should be done by mature legislators who are competent to deal with the subject of transportation.

THE OBLIGATION EXISTS

CONFESSEDLY, the coal industry is prince or pauper. Yesterday it was a prince, today it is a pauper. The supply of coal is either clogging the highways of commerce or there isn't enough of it to go around. The capital invested in the coal industry is either receiving dividends which to some seem scandalous or begging at the banks for an extension of time on loans. Coal is extremely whimsical in its conduct.

The obligation rests on the operators in their own interest to remove, in so far as possible, those wild fluctuations and those tremendous uncertainties which touch their business so deeply. They are not true to themselves unless they try it.

When confronted by the facts of the case and by the recommendation that they act, some operators say that they desire greatly the stabilization of their business but don't want to rely upon any governmental commission to do it for them. They declare, with emphasis, that they do not believe it possible for any commission to keep its own regulations true to its own program for any length of time or to make wise rules. Some go so far as to say that if the lock on their door were broken they would want it fixed but they would not want a burglar to fix it. This means to say that they recognize that certain things must be done in the industry but they don't want politics to do it.

If we honor that point of view—as we must—we still realize that it is a point of view, which rather tends to evade the issue. It is a proper objection to a method but it doesn't relieve the operators themselves from their obligation to provide a method of procedure which suits them.

Many coal operators take another view. They say that when unsound methods are being advocated, it is no time to discuss sound methods. They say—with truth—that the advocates of the unsound method are likely to steal their sound proposals, twist them to suit their own convenience; and, ruin them in the twisting process. There is much virtue in that objection because there is real danger that the proponents of regulation will make capital for themselves of every word from the mouth of their victim. However, that is a criticism leveled at the regulators and not a reason why the thing itself should not be done. It does not remove the obligation to do what is necessary to end the chaos in coal.

All of the objections which can possibly be brought forward disappear instantly before that careful reasoning which punctures and then dismisses the false issue. Analysis always brings to light the truth that the job needs to be done, in so far as possible and the operators must do it. The fact is, that the operators own the mines. It is their property which is involved. That property is suffering today because of these irregularities here discussed. The obligation which the operators owe to themselves and to their stock-holders is by some process to remove these causes, for which they are responsible, which lead to the irregularities. Resistance to the other man's proposal, if that proposal is unsound, is perfectly proper. Denial of the ability to coerce the buyers, to improve the carriers and to prevent strikes is also wholly proper. But, to resist those which are false does not remove the obligation to find the true solution. The irregularities are a fact, they are costly to capital and they are ruinous to the industry. By some process they will have to be removed. To remove them is the obligation which rests squarely upon the shoulders of the operators. Because many elements are beyond their control is no reason why they should do nothing.

RAILROAD EFFICIENCY

TRANSPORTATION needs of the country have been met by the railroads during the year 1923 in a manner that deserves commendation. The achievements of the carriers are referred to by the Interstate Commerce Commission as "unprecedented." The greatest volume of traffic in history was moved without serious delays and car shortages.

During the year there was substantial improvement in the condition of all railway equipment. Expenditures for new equipment to meet the growing transportation requirements of the country exceeded those of any previous year. The carriers stored for railroad use the largest supply of coal ever set aside by them for that purpose.

Through cooperation with shippers there was a noticeable increase in the earlier movement of various commodities which resulted in making available an increased amount of freight equipment for the crop movement in the late summer and fall months. During nine consecutive months of 1923, car loadings averaged more than a million cars weekly.

Despite this record of railroad efficiency, however, the earnings of the carriers as a whole fell short of the moderate return of 5¾ percent, the return being estimated at 5.11 percent on the tentative valuation fixed by the Interstate Commerce Commission for rate-making purposes.

Expenditures for new equipment totaled $1,075,897,940. Additional expenditures authorized for this purpose, but carried over into 1924, amounted to $300,806,519. Expenditures during 1923 for fuel, materials and supplies approximated $1,800,000,000. A total of $3,176,704,459, it will be seen, was expended or authorized to be expended during the year to improve and maintain the railroads.

This vast outlay of money represents an important factor in the prosperity of the country. Over three billion dollars have gone to the industries and the labor of the country. The business activities thereby stimulated have in turn increased the domestic demand for both products of manufacture and of agriculture.

In view of the fact that these unprecedented achievements were accomplished despite the miners' strike which interfered with the movement of coal and the shopmen's strike of 1922 which left motive power and cars in a deplorable state, it would appear that there is little, if any, justification for tampering with the Transportation Act at this time.

THE MINING CONGRESS JOURNAL although in favor of a reduction in rates on basic commodities and an increase, if necessary, in rates on finished products, does not believe amendments to the Transportation Act at this time will serve the public interest or accomplish any good purpose.

The costly lesson learned as the result of the country's experience with the United States Railroad Administration, should have fully demonstrated the futility of government interference with private management. As long as the roads are being managed and operated efficiently, they should be left alone by legislators. They should be permitted to carry out their program of cooperation with shippers and the general public without being subjected to further handicaps which new legislation might impose.

President Coolidge's First Address to 68th Congress

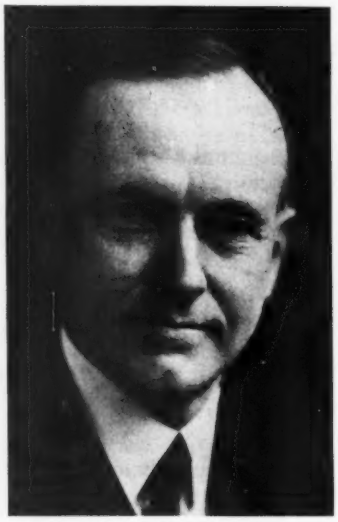
Coal

The cost of coal has become unbearably high. It places a great burden on our industrial and domestic life. The public welfare requires a reduction in the price of fuel. With the enormous deposits in existence, failure of supply ought not to be tolerated. Those responsible for the conditions in this industry should undertake its reform and free it from any charge of profiteering.

The report of the Coal Commission comprises all the facts and represents the mature deliberations and conclusions of the best talent and experience that ever made a national survey of the production and distribution of fuel. I do not favor government ownership or operation of coal mines. There is need for action under private ownership that will secure greater continuity of production and greater public protection. The federal government probably has no peace-time authority to regulate wages, prices, or profits in coal at the mines or among dealers, but by ascertaining and publishing facts it can exercise great influence.

The source of the difficulty in the bituminous coal fields is the intermittence of operation which causes great waste of both capital and labor. That part of the report dealing with this problem has much significance, and is suggestive of necessary remedies. By amending the car rules, by encouraging greater unity of ownership, and possibly by permitting common selling agents for limited districts on condition that they accept adequate regulations and guarantee that competition between districts be unlimited, distribution, storage, and continuity ought to be improved.

The supply of coal must be constant. In case of its prospective interruption, the President should have authority to appoint a commission empowered to deal with whatever emergency situation might arise, to aid conciliation and voluntary arbitration, to adjust any existing or threatened controversy between the employer and the employe when collective bargaining fails, and by controlling distribution to prevent profiteering in this vital necessity. This legislation is exceedingly urgent and essential to the exercise of national authority for the protection of the people. Those who undertake the responsibility of management or employment in this industry do so with the full knowledge that the public interest is paramount, and that to fail through any motive of selfishness in its service is such a betrayal of duty as warrants uncompromising action by the government.



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President Coolidge in first message to Congress makes definite recommendations concerning mining industry.

Immigration

American institutions rest solely on good citizenship. They were created by people who had a background of self-government. New arrivals should be limited to our capacity to absorb them into the ranks of good citizenship. America must be kept America. For this purpose, it is necessary to continue a policy of restricted immigration. It would be well to make such immigration of a selective nature with some inspection at the source, and based either on a prior census or upon the record of naturalization. Either method would insure the admission of those with the largest capacity and best intention of becoming citizens. I am convinced that our present economic and social conditions warrant a limitation of those to be admitted. We should find additional safety in a law requiring the immediate registration of all aliens. Those who do not want to be partakers of the American spirit ought not to settle in America.

Muscle Shoals

The government is undertaking to develop a great waterpower project known as Muscle Shoals, on which it has expended many million dollars. The work is still going on. Subject to the right to retake in time of war, I recommend that this property with a location for auxiliary steam plant and rights of way be sold. This would end the present burden of expense and should return to the Treasury the largest price possible to secure.

While the price is an important element, there is another consideration even more compelling. The agriculture of the Nation needs a greater supply and lower cost of fertilizer. This is now imported in large quantities. The best information I can secure indicates that present methods of power production would not be able profitably to meet the price at which these imports can be sold. To obtain a supply from this water power would require long and costly experimentation to perfect a process for cheap production. Otherwise our purpose would fail completely. It seems desirable, therefore, in order to protect and promote the public welfare, to have adequate covenants that such experimentation be made and carried on to success. The great advantage of low-priced nitrates must be secured for the direct benefit of the farmers and the in-

Paragraphs Pertinent to Mining Industry

direct benefit of the public in time of peace, and of the government in time of war. If this main object be accomplished, the amount of money received for the property is not a primary or major consideration.

Such a solution will involve complicated negotiations, and there is no authority for that purpose. I therefore recommend that the Congress appoint a small joint committee to consider offers, conduct negotiations, and report definite recommendations.

Tariff Law

The present tariff law has accomplished its two main objects. It has secured an abundant revenue and been productive of an abounding prosperity. Under it the country has had a very large export and import trade. A constant revision of the tariff by the Congress is disturbing and harmful. The present law contains an elastic provision authorizing the President to increase or decrease present schedules not in excess of 50 per centum to meet the difference in cost of production at home and abroad. This does not, to my mind, warrant a rewriting of the whole law, but does mean, and will be so administered, that whenever the required investigation shows that inequalities of sufficient importance exist in any schedule, the power to change them should and will be applied.

Railroads

Criticism of the railroad law has been directed, first, to the section laying down the rule by which rates are fixed, and providing for payment to the government and use of excess earnings; second, to the method for the adjustment of wage scales; and third, to the authority permitting consolidations.

It has been erroneously assumed that the act undertakes to guarantee railroad earnings. The law requires that rates should be just and reasonable. That has always been the rule under which rates have been fixed. To make a rate that does not yield a fair return results in confiscation, and confiscatory rates are of course unconstitutional. Unless the government adheres to the rule of making a rate that will yield a fair return, it must abandon rate making altogether. The new and important feature of that part of the law is the recapture and redistribution of excess rates. The constitutionality of this method is now before the Supreme Court for adjudication. Their decision should be awaited before attempting further legislation on this subject. Furthermore, the importance of this feature will not be great if consolidation goes into effect.

The settlement of railroad labor disputes is a matter of grave public concern. The Labor Board was established to protect the public in the enjoyment of continuous service by attempting to insure justice between the companies and their employes. It has been a great help, but is not altogether satisfactory to the public, the employes, or the companies. If a substantial agreement can be reached among the groups interested, there should be no hesitation in enacting such agreement into law. If it is not reached, the Labor Board may very well be left for the present to protect the public welfare.

The law for consolidations is not sufficiently effective to be expeditious. Additional legislation is needed giving authority for voluntary consolidations, both regional and route, and providing government machinery to aid and stimulate such action, always subject to the approval of the Interstate Commerce Commission. This should authorize the commission to appoint committees for each proposed group, representing the public and the component roads, with power to negotiate with individual security holders for an exchange of their securities for those of the consolidation on such terms and conditions as the commission may prescribe for avoiding any confiscation and preserving fair values. Should this permissive consolidation prove ineffective after a limited period, the authority of the government will have to be directly involved.

Consolidation appears to be the only feasible method for the maintenance of an adequate system of transportation with an opportunity so to adjust freight rates as to meet such temporary conditions as now prevail in some agricultural sections. Competent authorities agree that an entire reorganization of the rate structure for freight is necessary. This should be ordered at once by the Congress.

Pennsylvania Avenue

From the White House Grounds

Reorganization

A special joint committee has been appointed to work out a plan for a reorganization of the different departments and bureaus of the government more scientific and economical than the present system. With the exception of the consolidation of the War and Navy Departments and some minor details, the plan has the general sanction of the President and the Cabinet. It is important that reorganization be enacted into law at the present session.

IMMIGRATION RESTRICTION UNDER DILLINGHAM QUOTA LAW

The Effect of This New Plan of Governing Immigration Shown in Department of Labor Report — Illegal Entry of Aliens Increased with Restrictive Laws

THE interest of the mining industry in immigration questions is shown by its passage of resolutions covering its immigration policy at the annual conventions of the American Mining Congress. There have been great changes in the national and individual characteristics of those seeking admission to the United States since the World War. These changes are best shown in the immigration report just issued by the Department of Labor.

A considerable increase in the number of alien immigrants admitted, a large numerical and proportional decrease among aliens leaving the United States, and a growing tendency of inadmissible European aliens to attempt surreptitious entry into the country are outstanding features of the immigration record during the second year's operation of the Dillingham quota limit law, according to the annual report of Commissioner General W. W. Husband of the United States Immigration Service to the Secretary of Labor. The report shows that a total of 522,919 immigrant aliens were admitted in the fiscal year ended June 30, or 213,363 more than in the previous fiscal year, the difference being almost entirely due to increased immigration from British North America and Mexico, and to the fact that natives of North and West European countries used 90 percent of their alloted quotas compared with only 46.4 percent in the preceding fiscal year.

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Photo by Brown Bros., N. Y.

THE PROMISED LAND

(Above) EXAMINATION AT ELLIS ISLAND

Emigration Greatly Decreased

Only 81,450 aliens left the United States for permanent residence abroad, compared with 198,712 in the fiscal year 1922, and an annual average of 288,578 in the five prewar years 1910-1914. During the 15 years, 1908-1922, 100 emigrant aliens departed for every 276 immigrant aliens admitted, but in the year ending June 30 only 100 departed for every 642 admitted. The Commissioner General refers to the latter record as indicating "a most unusual degree of stability" and attributes it to favorable employment conditions in the United States, fear on the part of alien residents that once out of the country the quota law might make their return difficult, and in part to the increased proportion of Northwestern European peoples who have always become permanent settlers to a much greater extent than the more recent immigrant races.

In discussing the development of immigration law the report states that "Even a casual survey of congressional discussions of the immigration problem during the past quarter of a century demonstrates very clearly that while the law makers were deeply concerned with the mental, moral, and physical quality of immigrants, there developed as time went on an even greater concern as to the fundamental racial character of the constantly increasing numbers who came. The record of alien arrivals year by year had shown a gradual falling off in the immigration of northwest European peoples, representing racial stocks which were common to America even in colonial days, and a rapid and remarkably large increase in the movement from southern and eastern European countries and Asiatic Turkey. Immigration from the last-named sources reached an annual average of about 750,000 and in some years nearly a million came, and there seems to have been a general belief in Congress that it would increase rather than diminish. At the same time no one seems to have anticipated a revival of the formerly large influx from the "old sources," as the countries of northwest Europe came to be known. This remarkable change in the sources and racial character of our immigrants led to an almost continuous agitation of the immigration problem both in and out of Congress, and there was a steadily growing demand for restriction, particularly of the newer movement from the south and east of Europe.

The literacy test provision in the general immigration act of 1917, as well as the more recent quota limit law, are referred to as evident attempts on the part of Congress to reduce immigration from southern and eastern Europe and

Asiatic Turkey without "unduly interfering with the normal movement of northwest European peoples into the United States." In commenting on the effect of the quota limit law in this respect, it is pointed out that in 1913-14, under the "open door" policy, 921,160, or 75.6 percent of the total number of immigrants admitted, were of racial stocks peculiar to Southern and Eastern Europe and Turkey, and only 253,855, or 20.8 percent of the whole, were of northwest European peoples. In the year 1922-23, under the quota law, only 162,695 of the former peoples were admitted, a decrease of 758,465, and they constituted only 31.1 percent of the total immigration. On the other hand while the actual increase in the number of northwest Europeans was only 20,652, they formed 52.5 percent of the total immigration in 1922-23 compared with only 20.8 percent in 1913-14.

In pointing to these facts, it will, of course, be understood that the bureau is not commenting on the relative merits of the various alien peoples or groups composing our immigration, but rather that it is merely attempting to show from statistical records to what extent the quota limit law has met the purpose of Congress as that purpose is understood.

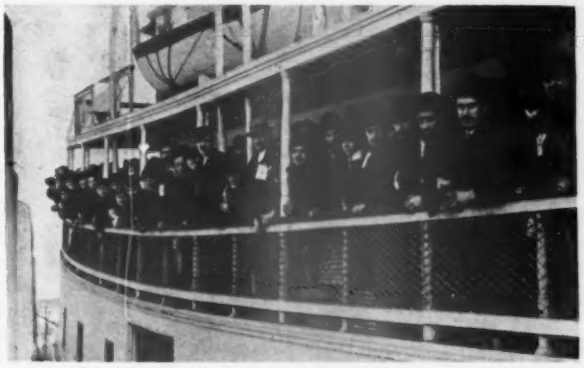
Immigration from Canada and Mexico

British North America contributed 117,011, and Mexico 63,768 immigrant aliens in 1922-23, compared with 46,810, and 19,551, respectively, in the preceding year, the increase apparently being due in a large measure to the demand for industrial workers in the United States, which demand was not fully supplied from Europe as in former years. The movement from Canada, which reflected the mixed population of the Dominion, included 39,295 English, 30,438 French, 17,045 Scotch, 12,000 Irish, and 4,486 Hebrews, while nearly all immigrants from Mexico were of the Mexican race.

In commenting on the Mexican influx the report says: "Until within quite recent years comparatively few Mexican laborers got beyond the border states, but during the war they were taken in considerable numbers to the Middle Western States, where many of them were left without employment by the industrial depression which followed. It is said that most of these eventually returned to Mexico or the southwest, but the demand for common labor in the north and east during the past year brought large numbers into industrial centers in Pennsylvania and elsewhere as substitutes for European laborers whose unlimited admission had been checked by the quota law."

Oriental Immigration

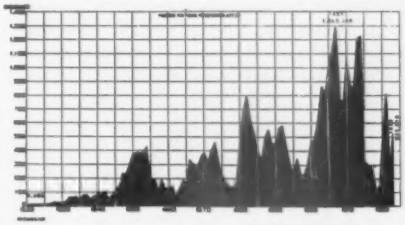
The number of Chinese admitted decreased from 4,465 in 1921-22 to 4,074, in the past year, and the number leaving the country dropped from 6,146 to 3,788 in the same period. Japanese arrivals were 5,652, and 2,884 departed, compared with 6,361 and 4,353, respectively, in the previous year.



LEAVING ELLIS ISLAND FOR NEW YORK DOCK FOR ENTRY INTO THE UNITED STATES

Rejections at Ports of Arrival

A total of 20,619 or 2.9 percent of all aliens applying for admission were rejected, the chief causes being likely to become a public charge 8,239, excess quota 2,680, unable to read 2,095, stowaways 1,929, physical disease and defects 1,606, contract laborers 1,409. "Probably no other phase of immigration work," says the report, "attracts more widespread attention or causes so much unfavoable comment as do the rejection and deportation of aliens applying for admission at ports of entry, and yet of those who so applied in the fiscal year just ended only 1.3 percent were rejected at seaports * * * and at New York, which is always the storm center of criticism in this regard, only 1.1 percent of the aliens applying during the past year were turned away."



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LONG TIME TREND OF IMMIGRATION

Deportation After Landing

Deportations under warrant proceedings totaled 3,661 during the year, the principal causes being likely to become a public charge 1,188, criminals 394, mental diseases or defects 319, prostitutes, procurers, etc., 299.

Border Problems

Reports of officers in charge of land border immigration districts indicate that the illegal entry of aliens over the land boundaries has increased with the advent of more restrictive laws, and that the smuggling in of Europeans who cannot gain admission under the quota act has already become quite a serious problem. It is stated that the border immigration forces, originally organized to prevent the smuggling of Chinese, are now almost entirely occupied with examining applicants for legal admission at fixed stations and that the border between such stations is practically unguarded. The situation, says the report, "clearly suggests the necessity of reviving, or rather creating, a border guard or patrol to perform purely police work in the prevention of alien border running."

Commenting on the quota limit law, which expires by limitation June 30, 1924, the report states that "its administration has been attended with fewer difficulties than during the preceding fiscal year, and if the law were amended in some particulars it is doubtful whether any other equally effective method of restricting immigration could be devised that would present fewer administrative difficulties or cause less hardship to aliens or inconvenience to their friends in the United States."

The only specific recommendations, however, are that the monthly quota of 20 percent be decreased in order to insure a better distribution throughout the year; that the quotas be counted overseas rather than at United States ports, and that a special border guard force be created to prevent smuggling over the land boundaries.

In connection with the border problem presented in the foregoing report it is interesting to learn that many thousands of those aliens deemed undesirable evade our restrictions.

Aliens barred by immigration laws are being smuggled into the United States by an elaborate system, and as many as 1,000 a day are crossing the borders or entering the principal ports, according to estimates of James J. Davis, Secretary of Labor, made public by the National Industrial Conference Board.

NATIONAL IMMIGRATION CONFERENCE

An Interesting Exchange of Diverse Opinion on this Vital Subject—Naturalized Americans in Attendance Radically Disagree Over Desirability of Races

DURING a two-day conference on December 13 and 14, the pros and cons of the immigration question were presented and threshed out at this meeting, held under the auspices of the National Industrial Conference Board. The meeting opened with Frederick P. Fish, of Boston, chairman of the National Industrial Conference Board, as chairman of the meeting making a short statement of the purpose of the conference and a request for adherence to the program. The attempt to adhere to the lines laid down for discussion caused many sharp clashes during the later sessions.

The whole problem of immigration was set forth in a scholarly address by M. W. Alexander, managing director of the Conference Board.

One of the principal addresses of the day was made by Dr. Henry Fairchild Osborn, president of the American Museum of Natural History, who charged that Ellis Island was being used as a dumping ground for undesirable citizens of European nations. Dr. Osborn declared that at the same time some European nations were decoying their subjects in America toward repatriation, thereby endeavoring to get the best of the trade in citizenship at the expense of American institutions.

"In cold-blooded scientific language, our best stock is threatened with extinction. In certain parts of this country—not in all, thank God—the original stocks are becoming extinct. That is a lesson we learn from the dinosaur, that when it takes a wrong tendency a stock dies out.

"You have an illuminating example of this in two of our greatest universities—Harvard and Yale. Statistics show that if Harvard and Yale had to depend upon the sons of graduates, they would eventually be empty."

"In the Appalachian Mountain, for example," he declared, "there are thousands and thousands of young men who are unutilized. America's problem is one of marshalling her forces, hordes to meet the peaks of industry and not of importing immigrants in and in the slumps to have a million Americans begging for work."

Dr. Osborn made a scientific analysis of different national characters, and explained why, in his belief, the Japanese and Chinese, although possessing high and fine qualities, cannot be Americanized. The growth of any country is an expression of its "national character." England, France, Germany and other countries of northern Europe have had their national characters weakened by the losses of the war. This, however, is not true of Italy or Spain.

The distinguished scientist said it was common knowledge that many European countries have for years been trying to

SEE THAT THEY MEASURE UP
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A CLEAN BILL OF HEALTH IN MORALS AND CITIZENSHIP
1ST RULE FOR ADMISSION

guide their undesirable and dependent classes to American shores.

"One country has for two and a half years been trying to persuade its superior emigrants to return from America. And the ships that bring back these desirables are filled up and sent back with inferior emigrants."

Dr. Osborn strongly endorsed Secretary Davis' program of selective immigration.

"Our first duty is to our own country and our own civilization. No element should be allowed to become preponderant here which, conglomerating in any one region, might threaten our national character."

"France estimated that each man is worth $3,000 to the nation. No doubt to the United States a sound able-bodied immigrant is worth more than that. But what do the dependents cost us? More than $1,000 a head yearly. Gov. Smith has just asked for $50,000,000 for the State's insane asylums. And one-third of all these inmates are immigrants or the children of immigrants. The solution of this problem is selective immigration."

Probably the most interesting single statement made during the conference was that of Dr. Spencer L. Dawes, medical examiner, New York State Hospital Commission, and president of the Interstate Conference on Immigration, on the question, "Shall a physical examination of aliens desiring to emigrate to the United States be held at major ports of embarkation by United States medical officers?"

"This scheme of a physical examination of aliens by U. S. medical officers abroad, Dr. Dawes pointed out, is not only illegal but is illogical and impossible as well. As a matter of fact, a joint committee of the U. S. Senate and the House of Representatives have carefully investigated this matter and have found that without special treaties covering the proposed examination abroad the same could not be conducted and they further reported that in their opinion and as a result of their investigations no foreign government would agree to such a treaty. Even were we allowed—under whose supervision, under what direct authority would these physicians act? The State or Treasury Department, the Surgeon General of the Public Health Service or the Secretary of Labor? Under what provision of the Constitution could they possibly exercise their authority on foreign territory? Assuming, therefore, for the sake of argument the legality and the practicability of the procedure if it were carried out, not only would it mean the establishment of a large and expensive personnel abroad subject to all kinds of outside influences, but it would defeat the very object which it was intended to accomplish. Section 19 of the Act of February 5, 1917, provides among other things for the deportation of certain classes and Section 9 of the same Act reads:

"And that the existence of such disease or disability might have been detected by means of a competent medical examination at such time" (referring of course to examination before embarkation) and fining the transportation company responsible for the entry of the alien.

"How, may I ask you, could the federal government enforce the sections of the law referred to? Either the deportation at the expense of the steamship company or the fine upon the steamship company, if its own officials had made the examination and passed the emigrant in Europe as fit to enter the United States. You can readily see that the whole structure relating to deportation and fine would fall to the ground. Sections 9 and 19

of the Act referred to, insofar as they relate to steamship companies, might as well be elided from the law.

"Destructive criticism, of course, is rarely of value unless it is accompanied by constructive criticism. Permit me, therefore, to outline to you a method advocated by me for many years and warmly approved of by the many investigators, federal officials and members of Congress. **It is that there shall be provided as a prerequisite to the granting of a vise to the emigrant that he shall present a medical certificate on a blank provided by the Commissioner General of Immigration embodying family and personal history of the emigrant and certifying that the emigrant is not of the excluded classes. This medical certificate to be made out by a physician in the employ of the transportation company which would bring him to the United States, providing a fine based on the cost of transportation not less than three times such cost and leaving in the law all the provisions of Sections 9 and 19 referred to above.** This would not, of course, even though a visé were granted, necessarily permit the emigrant to enter the United States. It would merely serve to lighten the labors of the Immigration Inspectors at the ports of entry and, in the hands of an honest steamship company, be a material saving to them in cost of fines and return passages of deportees and would place the responsibility directly where it belongs, namely, upon the transportation company, making it possible to severely penalize the steamship companies who attempted to evade the law and would not in any way interfere with deportation proceedings as carried out at present."

The point emphasized in Dr. Dawes' statement is specifically covered in the immigration resolution passed by the American Mining Congress at its Milwaukee convention in October and appears to be the most satisfactory solution of this difficult problem which has yet been proposed.

Charles Cheney, of Cheney Brothers, speaking on behalf of the American manufacturers, stated that there was considerable misapprehension in the public mind as to the attitude of American manufacturers and employers of labor generally on the question of immigration. He thought this mistaken impression existed in the belief that manufacturers wanted free influx of foreign labor. Mr. Cheney stated this is far from the case; that American manufacturers are much more deeply interested in the restriction of immigration to those classes of immigrants who have the possibilities of good citizenship and that they stand united on a program of immigration which would insure only the entrance of the most fit.

E. J. Henning, Assistant Secretary of Labor, who addressed the industrial relations division of the American Mining Congress at Milwaukee in Ocotober, stated that:

> "The time is at hand when the whole immigration question will cease to be a shuttlecock of steamship company and politicians and will be in the hands of capable, responsible and upright United States officials."

He said he hoped the United States would some day segregate the economic question of the wage earner from the problem of immigration.

Mr. Henning declared there is actual unemployment in the United States right now which will make itself felt after January 1st. Industrialists said eight months ago that a million laborers were needed here. If that were true and had they been imported as immigrants, there would be more than a million men walking the streets after January 1st, he said.

John A. Penton, president of the Penton Publishing Company, Cleveland, Ohio, presided at a discussion of the percentage restriction, which at present is three percent per annum of the nationals from foreign countries who were domiciled here in 1910. A great many people are advocating a change in the law, reducing the percentage to two percent as of 1900, which would cut the Slavic and Near Eastern quotas and raise the limit for Britishers, Scandinavians, Germans and French.

This session was especially marked by strong pleas from naturalized citizens who represented various foreign races naturalized into the citizenship of the United States, on behalf of the right of their fellow countrymen to emigrate to this country as freely as they see fit. At times the discussion became a vigorous dispute between the representatives of these various races with regard to the relative merits of their own races as compared to every other race seeking admission to the United States. This was the one feature of the conference which, while unavoidable from the standpoint of the conference itself, would call for criticism of the spirit manifested by those who addressed it. In this session, as in many of the others, there was so strong a preponderance of naturalized Americans, particularly from Southeastern Europe, emphatically demanding the right of their peoples to enter the United States without restrictions that succeeding speakers were forced to emphasize the fact that after all this is America's problem.

The American Federation of Labor was primarily responsible for the present restrictive immigration law and organized labor stands solidly behind the law, declared Hugh Frayne, New York representative of the A. F. of L.

Labor at this time has no further recommendations to make regarding immigration unless new and important suggestions as a result of the conference are placed before it, said Mr. Frayne.

> "If there is any change in our policy it should be in the contract labor law and against the exploiting of those in foreign lands by subterfuge," he declared. "If we continue to fill this country with insane and criminals who are seeping through today there will come a time when there will be nobody left to uphold our Constitution. Labor is for entrance of suitable immigrants from all nations except the Asiatic ones."

Referring the question of amending the contract labor law, James A. Emery, counsel to the National Manufacturers' Association, said it seemed to be the impression that thousands of people had come to this country under the provisions of that law. He quoted official government statements to show that so few skilled artisans had come under the law that it had not even been necessary to record them.

The question as to whether or not the 1917 illiteracy act should be modified was debatable, said Mr. Emery. The act would never keep out a Lenin or a Trotsky, he said, and would keep out hard working, potential citizens who could not read and write. He favored the Canadian system of immigration under which the government selected the kind of immigrants it desired when it wanted them. As for a proposed system of registration for aliens, Mr. Emery was opposed to it if it became part of a large system of espionage. He suggested an immigration law that would permit the socially desirable to enter and that would be flexibly administered.

General Harry T. Allen, who was the guest of honor at luncheon, said that the immigration problem was more than an economic or sociological one; that it was a political problem.

> "It is a question involving the commingling of an Old World and a New World racial, cultural and geographic background," he said. "The immigration problem is indeed one of the essentially great questions of the future of the United States.
>
> "You are well acquainted with the fact that the financial returns from their emigrants in the United States constitute one of the capital resources of certain southern and southeastern

states of Europe. Your charts show the proportions of our permanent and temporary immigrants. They also clearly show the numbers and nationalities and their determination in our land.

"The determination of the character of immigration, even to racial or state discrimination, is a sovereign right that has been practiced at all times. The state must for political, economic and industrial reasons, as well as for its general welfare, be accorded such a right. Modern history is full of examples of the exercise of this right. Japan has discriminated for what it considers sound reasons against the Chinese, and the Turks have discriminated against the Greeks and Armenians."

The ten-minute time limit of the speakers in these discussions was enforced by a "traffic signal" which flashed a red light when the speakers' time approached two minutes from completion. When the following two minutes had passed, if the speaker had not finished he was summarily stopped.

It will be of interest and service to those in the mining industry who have been studying this immigration problem to have the basis of discussion which was more or less adhered to in the conference just held. The questions which formed the topics of discussion in the public forum were printed in full in the December issue of the MINING CONGRESS JOURNAL.

It was specifically stated in the announcements that no motion or formal vote on any question relating to immigration would be entertained. Therefore, the meeting was not purposed to lead up to a formulation of policy, but merely to get before the Board the questions of issue, and the same questions are of vital interest to the mining industry in the formulation of its own immigration policy.

GOLD AND SILVER INQUIRY COMMISSION HEARING

Producers Submit Evidence and Urge Necessity for Further Geological Data and Governmental Assistance in Development of Placer Mining Industry

A MEETING called by Fletcher Hamilton, special field investigator for the United States Senate Commission of Gold and Silver Inquiry, was held at Sacramento, Calif., December 3 and 4, 1923.

Evidence reciting the trials of the prospector in complying with the bond provisions of the 1916 Homestead 640-Acre Grazing Act was introduced by E. A. Carroll, of the White Oak Mining Company, Mariposa County, and by C. H. Burk, of the same section. John F. Armstrong, a former registrar of the United States Land Office, also submitted evidence in respect to the conflicting interests of the prospector and homesteader.

Evidence as to present and prewar costs of operation, production, labor efficiency, taxation and statistical information was submitted by mine operators, engineers and others as follows:

A. S. Howe, superintendent, Central Eureka Mng. Co., Sutter Creek, Calif.

Arthur B. Foote, general manager, North Star Mines, Grass Valley, Calif.

F. W. Nobs, general manager, Empire Mines, Grass Valley, Calif.

G. McM. Ross, E. M., Stockton, Calif.

C. E. Trezona, manager, Kate Hardy Mines, Alleghany, Calif.

A. Sutro, vice-president, Dominion Mine Organization.

H. C. Cutting, owner, Buzzard Hill Mines, Siskiyou County.

E. S. Van Dyke, president, Cons., Mining & Refining Co.

E. A. Carroll, manager, White Oak Mining Co., Mariposa County.

Lloyd Root, state mineralogist.

C. A. Logan, district engineer State Mining Bureau.

John F. Armstrong (former registrar), U. S. Land Office.

Reaves Davis, Happy Camp operator.

H. W. McCullough, gravel mining, Michigan Bluff.

Robert I. Kerr, secretary-treasurer, California Metal & Mineral Products Association.

A summing up of the testimony adduced at the hearing indicated:

A gradual closing of the public domain to the prospector, because of drastic regulations of the United States Land Office and the Department of Agriculture.

Increased taxation, both state and federal.

Increased costs of operation without a corresponding increase in the price of their product.

The wasting of a natural resource due to the impossibility of working low-grade ores.

An alarming decrease in the population of mining counties due to the suspension of mining operations.

Additional burdens placed upon operators as the result of federal legislation providing for the storage of mine tailings.

A protest to certain publicity matter issued by the Treasury Department in reference to the purchase of government securities, in which mining investments are referred to as uncertain and extremely speculative.

The necessity for further geological data and survey of the mining areas of the state and the revision of legislation or governmental assistance in the development of the placer mining industry.

An average increase in the wages of lode mine employees, 1913-1923, of approximately 66 percent.

An average increase in the wages of dredge operators of over 50 percent.

An average increase in mine supplies of approximately 48 percent.

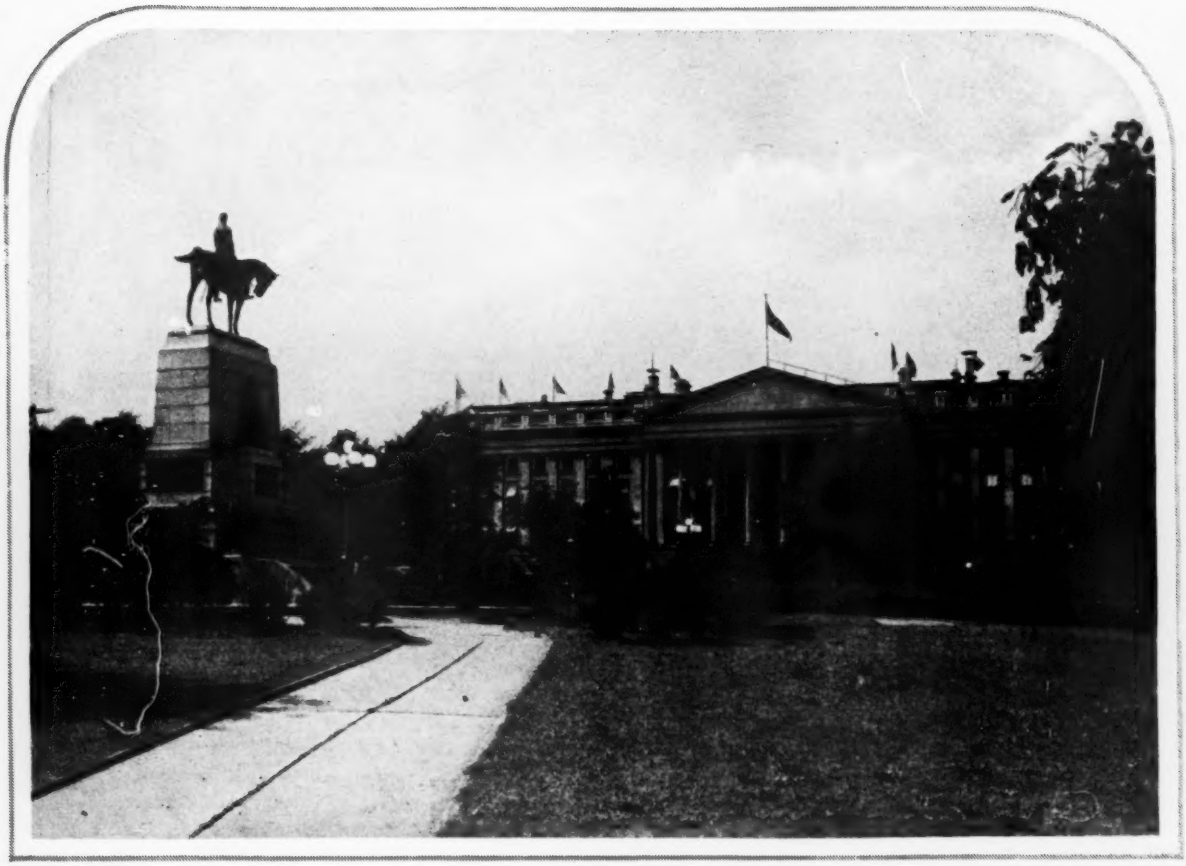
Electric power for the same period advanced in price 30 to 40 percent.

WAGE AGREEMENT DECISION

THE government lost its suit before the Supreme Court in a case involving a wage agreement in the window glass manufacturing industry. In this case the government charged that an agreement between the manufacturers and workmen by which certain groups of plants were operated during a part of the year and other groups during another part constituted an agreement in violation of the anti-trust law. In the argument of the case before the court, it was contended by government attorneys that if such an agreement was approved it might be extended to the coal industry with harmful effect, because it might allow either operators or miners to conspire to cease production in order to affect prices. The court, while not specifically passing on this angle of the situation, declined to declare the window glass wage agreement in violation of the anti-trust law, on the ground that there was no evidence of conspiracy, and because of the fact that the industry requires a class of highly skilled labor which is not sufficient to operate all the factories throughout the year.

GOVERNMENT COAL MINE

THE government reclamation service irrigation project at Williston, N. D. operates a coal mine on public land, which is said to be the only government-operated coal mine in the country. According to a report of the service, there was produced at this mine last year 12,000 tons of coal at a cost of $2.39 per ton, which was 36 cents below the average of the community.



THE UNITED STATES TREASURY

Proudly breaking the majestic sweep of Pennsylvania Avenue as it nears the Executive Mansion, it stands as solidly as the great financial structure it symbolizes

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PRINCIPLES OF INDUSTRIAL COOPERATION OUTLINED

Arizona Committee Presents Report Embodying Fundamental Principles that Go To the Very Root of the Industrial Problem

THE Arizona Committee of the American Mining Congress on Industrial Cooperation presents the following interpretation of the principles of industrial cooperation underlying the practice of the Arizona mining companies. Arizona has done much to further satisfactory relations between employes and employers in recent years, and the principles involved have proved their worth in actual operation. The foundation upon which the various companies work is identical, although the methods of putting these principles into operation vary greatly. Neither methods nor results are discussed at this time, as the methods depend upon local conditions which are not common to many properties, and the results depend upon the manner in which the work is carried out.

The principles underlying industrial cooperation are presented in the order of their importance, as follows:

1. Personal Contact.
2. Working Conditions.
3. Employes' Representation.
4. Reward for Increased Efficiency.
5. Community Conditions.

Personal Contact

Personal contact of the officials of a company, from president to shop or "jigger" boss, with the employes is the most important factor in establishing and maintaining industrial cooperation. The value and effect of such personal contact will depend largely upon the personality and character of the operating heads of departments, and their care in selection and training of their foremen and bosses. The employer must realize that the right side to any problem is not his own side, but somewhere between his side and his employes' point of view. When a problem is approached with sincerity and personal understanding on both sides, the right course will be found and followed. The vast majority of all men will play the game fairly and squarely unless suspicion, fear and hate have been permitted to obscure the points at issue.

No employer has the right or ability to handle labor unless he likes his men. Any employer who really likes his men has no difficulty in putting his personality across and in gaining the wholehearted respect and cooperation of practically all of the men working with him. The employer who does not like his men will do the least harm if he delegates such duties as bring him in contact with the men to one whose sincerity, fairness and honesty are immediately felt by the workman.

The essentials in the selection of foremen are personality and character. The ability to obtain the highest efficiency, physical and moral, depends upon a knowledge and understanding of the men under his direction. The success of personal contact depends upon the interest of the foreman in the employe and his problems, as daily association permits a closer contact than can possibly be obtained by those in higher positions without being inquisitive or patronizing. After selection, constant thought and training must be given to develop each official and foreman each day to a broader and broader viewpoint, by which each one can more readily inspire confidence, respect and good will. Without this relation, no amount of welfare work can make any lasting impression.

Working Conditions

The second most important factor underlying industrial cooperation is that of working conditions and environment under which a man does his daily work. The maintenance and enforcement of safety in working conditions is essential for continuous employment. As mining is a hazardous industry, this condition is foremost in the minds of employer and employe. Of equal importance is the policy of square dealing and justice on the part of the bosses, through which a man is assured of equitable treatment under any condition which arises. Under the policy of personal contact previously outlined, this condition is a natural consequence.

Of lesser vital importance are methods of securing continuity of employment and general physical conditions. A man's most important possession is his job, and its continuity should depend solely upon the faithful performance of work. The discharge of any employe is of great importance to him, and should be only for failure to perform work, infraction of rules and reduction of forces. The fair way of handling both employment and discharge is through a central bureau, where both the requirements and policies of the company as a whole are treated in the broadest way. The maintenance of adequate ventilation, sanitation, lighting and other physical conditions is a matter of course where the employer is in close personal and sympathetic contact with his men.

Employes' Representation

In fairness to the employe, some method must be established whereby the employes have an equal voice in the adoption of regulations governing their work, conditions of employment and adjustment of grievances and complaints. This may vary from the method where every employe knows and feels that he can secure consideration, discussion and prompt and just action from any and every official of the company, from boss to general manager, to the method which involves elections, organization and committees. Each method may give equally good results under the local conditions involved.

Any method of representation has three objects: (1) To provide a simple means for presentation of complaints, grievances and suggestions with assurance of prompt consideration and action

by the management; (2) a means of placing before the body of employes the policies and problems of the company, and (3) a means of mutual solution of problems of mutual interest in such a way that the employer cannot take advantage of labor, even should he want to. The method must inspire confidence by the simplicity and fairness with which it is developed and maintained. Without confidence, any plan of employes' representation will fail.

The recommendations made to the 26th Annual Convention of the American Mining Congress by its Arizona Committee on Industrial Cooperation are such as to warrant the careful consideration of every mining operator. Their interpretation of the principles of Industrial Cooperation meets with the complete approval of this organization. The personnel of the committee includes:

Chairman—H. DeWitt Smith, United Verde Copper Co., Jerome, Arizona.

Members—F. A. Woodward, Iron Cap Copper Co., Copperhill, Arizona.

H. C. Henrie, Copper Queen Branch, Phelps Dodge Corp., Bisbee, Arizona.

Chas. F. Willis, Arizona Mining Journal, Phoenix, Arizona.

The American Mining Congress

Reward for Increased Efficiency

The consideration of wages and compensation is of great importance in any policy for developing cooperation, but high wages will not insure willing cooperation if the policies previously outlined are unsatisfactorily executed.

A fair day's wage is necessary that a man may provide satisfactorily for his family. A fair day's wage is not a money value, but the purchasing power in terms of food, housing and other commodities needed or desired. In return for a fair day's wage, insistence must be placed upon a fair day's work, in fairness to the two parties involved.

Of equal importance with a fair day's wage is the principle of additional reward for greater effort, superior skill or increased efficiency. The manner of paying this reward, on contract, bonus or piecework basis, makes no difference so long as the reward is proportional to the additional work performed. This method requires definite physical cooperation between employer and employe from which both can see visible results and material benefits. The reward for increased efficiency develops an interest in the man's own work that is felt throughout a plant, and develops an enthusiasm which carries into the home life the same spirit of helpful cooperation.

Community Conditions

Where cooperation has been fully developed on the job, cooperation toward improvement in living and social conditions follows as a natural consequence.

It is the duty of all mining companies, on account of their location at a distance from cities, to see that adequate housing is available for their employes. Reasonable rent is a natural corollary to adequate housing. The method of securing both will vary with local conditions. The company is also definitely responsible for the ordinary necessities of the community, such as schools, water supply and sanitation. However, the community itself must be responsible for the initiation, maintenance and participation in the religious, social and recreational features of the community. The company should give all possible encouragement to the development of these features, but leave the control and operation entirely to the individual. A condition of indifferent apathy must develop wherever any regulation of a man's leisure hours is directed by his employer, no matter how sympathetic that employer may be to his employe's needs.

INTERSTATE COMMERCE REPORT REVIEWS RAIL SITUATION

Year's Developments Favorable—Car Loadings Exceed Previous Records—Earnings Much Improved—Valuation Work Progressing

OUTSTANDING developments characterized the transportation history of the current year. The most noteworthy of these developments are (1) the unprecedented volume of traffic handled; (2) the concurrent transformation of a car shortage condition into one of car surpluses; and (3) an exceptional distribution of available equipment over territory in which the large traffic movement originated. These facts are outlined in the 37th Annual Report of the Interstate Commerce Commission to Congress.

The report states that during the first nine months of 1923 the carriers handled more great traffic than during any previous corresponding period, the net ton miles of revenue and non-revenue freight being reported as 43,796,799,000. This represents an increase of 2.09 percent over the corresponding period in 1920 which marked the previous record, 4.08 percent over the first nine months of 1918 when freight traffic was greatly stimulated by the war, and 31.1 percent over the first nine months of last year, when freight traffic was reduced somewhat by the loal miners' and railway shopmen's strikes.

Record Car Loadings

"During the first forty-four weeks of this year, January 1 to November 1, inclusive," says the report, "42,655,661 cars were reported loaded with revenue freight, an increase over the corresponding period of 1922 of 6,455,666 cars, in 1921 of 9,037,948, and in 1920 of 4,028,110. Not only was this unprecedented tonnage handled well, but the carriers reported a surplusage of the week ended July 14, of 84,210 railroad owned freight cars in good repair and 11,035 cars of private ownership.

"From June 22, to August 14 surplus cars increased 58,671 to 78,404, and shortages decreased from 11,896 to 8,315. On five occasions between these dates more cars of revenue freight were loaded during a week than were ever before loaded in a similar period. The report points out that at the end of the week of October 16, 1920, which marked the previous record loaded, there was a shortage of 69,517 cars and that on October 31, 1922, the shortage was reported at 179,239, whereas there was no material shortage during the peak loading period this year. This shows that a high degree of efficiency in transportation obtains at the present time, according to the report.

The Commission mentions three factors which have made possible this hitherto unequaled transportation performance; (1) the condition of power and cars; (2) the locomotives and cars placed in service; (3) increase in the mileage per car per day and loading of equipment.

With respect to railroad earnings, the report states that "The marked business revival of 1923 has greatly augmented the gross net earnings of the carriers as compared with the earnings in the depressed years of 1921 and 1922. In the calendar year 1921 the operating revenues of class one roads amounted to $5,573,153,133, and the net railway operating income which is the amount from which big charges and dividends are based, was $615,945,614 (revised monthly report figures). In 1922, in spite of strike troubles and the rate reduction effective in the middle of the year, the operating revenue increased $5,617,252,656 and the net railway operating income to $776,655,960.

"The year 1923 began with an inheritance of deferred maintenance resulting from the shopmen's strike. The decrease in the percentage of cars and locomotives in unserviceable condition had begun in the closing months of 1922 and this decrease was continued in 1923. The reports of the carriers showed that in July 1922, 14.2 percent of their freight cars were unserviceable; the corresponding figure for August 1923, was 7.8 percent. In September 1922 29.9 percent of freight road locomotives reported unserviceable. The corresponding figure for August 1923 was 19.8 percent. This has occasioned unusual expenditures for maintenance of equipment and has tended somewhat to reduce the net railway operating income which, for the first nine months of 1923 was 718,948,603. For the calendar year the corresponding figure will probably be in excess of a billion dollars, but possibly not sufficiently to make the reported earnings equivalent to 5¾ percent on the fair value of the property.

"The improvement in the earnings of the carriers noted above has by no means been equally distributed among the individual systems. The recovery from the depression of 1921 was more marked in the eastern and southern districts than in the western district in the first two-thirds of the year 1923."

Rate Scale Standards

It is stated in the report that attention has been given to working out a basis for freight rates that will reflect in a systematic way such elements as cost of service and value of service. "We are fully aware," says the Commission, "that commercial conditions have in the past prevented the development of harmonious and logical rate structures, and that such influences will continue to operate in the future. Nevertheless, it would frequently be helpful to us in our work of determining just freight rates if we had before us comprehensive information bearing upon both cost and value of service. In a tentative way a series of tables has been prepared purporting to give what would be a reasonable rate for carload transportation of any commodity on a cost of service basis for any distance. These tables should be thoroughly tested and expanded before they are published for use. Very thorough study along this line requires much more tedious work in ascertaining the cost of various railroad operations than in a systematic comparison of existing rates and would call for adequate appropriation."

Consolidation of Railroads

During the period covered by the report, the Commission held more than sixty days of hearing in Washington and in all sections of the country, except the southeast, for the purposes indicated in their tentative plans of August 3, 1921, for the consolidation of railroads. According to the report, those hearings now comprise nearly fifty volumes, containing over 11,000 pages of testimony and 630 exhibits, most of them voluminous.

The Commission reports progress in its valuation work. This work is progressing slowly. There has been much public dissatisfaction expressed concerning the results of the valuations made thus far. In this connection, the Commission states that "it was probably to be anticipated that as the complicated work of valuing such an extensive utility as the railroad plan of the United States, having so intimate a connection with our national life, approached an advanced stage of completion, there would arise questions as to whether the work had been done in conformity with the desires or intent of the Congress.

Valuations Involve Difficulties

"Few public undertakings have presented more controversial questions than the valuation of privately owned agencies of public service. Although the subject as it has been raised relates both to common carriers and public utilities has been widely discussed and litigated for more than a third of a century, wide differences of opinion still prevail regarding many of the problems it presents. These differences have not yet been set to rest either by the commissions or by the courts. In the valuation of railroads we encounter all of these complicated issues.

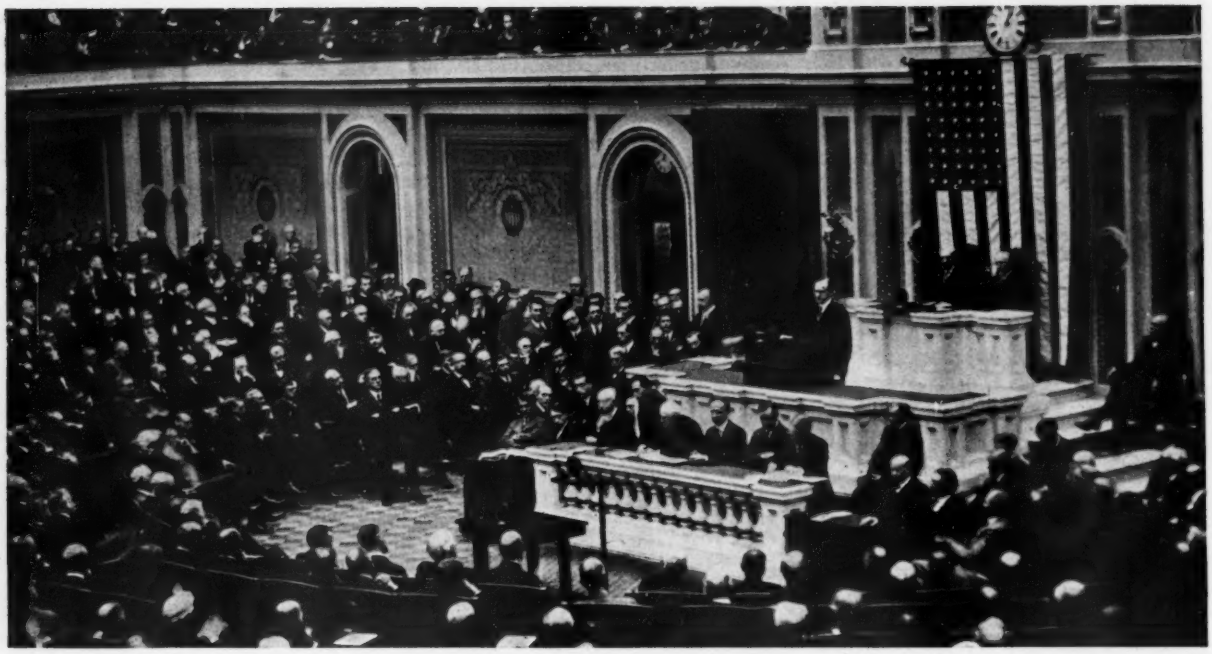
"It was not to be expected that in the most extensive valuation yet undertaken and involving properties of great aggregate value, there would fail to develop the most searching public and legal inquiry into the administration and correctness of interpretation of a complicated act that is not entirely free from ambiguities."

Recommendations

The Commission adheres to recommendations made last year. These recommendations included: (1) An amendment to Section 1 of the Interstate Commerce Act providing for the punishment of any person attempting to influence, by an offer of money or otherwise, an employe of a carrier.

TRANSPORTATION RECORD

Reviewing railroad transportation in 1923, the American Railway Association says the railroads have transported the greatest freight traffic in history without transportation difficulties and with virtually no car shortage, and in addition has improved the physical condition of their rolling stock. Loadings of revenue freight during the year amounted to 49,844,000 cars, an increase of 15 percent over 1922. Reference is made to the early movement during the year of coal which made equipment available for crop movement. Railroad earnings during the year were 5.11 percent. Freight rates are said to have been $500,000,000 less than in 1922 on account of the 10 percent reduction made in that year by the I. C. C. Railroads have placed in service 200,000 new freight cars, of which 75,346 were new coal cars, and 4,000 new locomotives. Railroads in 1923 expended $1,800,000,000 for fuel, materials and supplies, an increase of $131,426,729 over 1922. Railroads in 1923 placed in storage for their own use the largest supply of coal ever set aside by them for that purpose, and established a new record in the amount of coal moved to Lake Erie ports for shipment up the Lakes, the total being 31,313,000 tons.



LEGISLATIVE REVIEW

More Than 3,000 Bills Introduced—Committees Organized—Important Mining Legislation Before Both House and Senate—Sessions Marked by Sharp Disputes—Western Members Will Aggressively Push Department of Mines Bill

ALTHOUGH more than 3,000 bills were introduced, little was accomplished during the sixteen days that the 68th Congress was in session before the holiday recess. It will reconvene January 3rd. The sessions were marked by sharp disputes in both Senate and House between regular Republicans and Progressives, over representation of the latter group on committee assignments and revision of the rules.

They were, however, able to organize their committees, although the Progressives delayed the election of the Speaker of the House for four days. A compromise was reached to revise the rules of the House within 30 days. The Progressives are responsible for the failure of the Senate to elect Senator Cummins, of Iowa, as chairman of the Senate Committee on Interstate Commerce.

President Coolidge in his message to Congress recommended that attention be first given to a revision of the tax laws. The Treasury Department has submitted to the House Committee on Ways and Means a draft of a bill providing for the complete revision of the entire tax law. Among other things, this bill proposes to limit the deduction for discovery depletion to 50 percent of the net income from the property depleted. It also proposes to reduce the surtax rates, by providing that they shall commence with 1 percent on net income of from $10,000 to $12,000, to a maximum of 25 percent on net income in excess of $100,000. Provision is also made for a board of tax appeals to meet in various parts of the country. Consideration is being given to this legislation by the committee.

Department of Mines

Of outstanding interest to the mining industry was the introduction of bills in the Senate creating a Department of Mines which were presented by Senators Shortridge, of California, and Oddie, of Nevada. This legislation will be considered by the Senate in connection with the proposed reorganization of all the government departments. It is the purpose of western members of Congress to actively press for creation of this department.

Gold Mine Exemption

A bill to exempt income from the mining of gold from the income tax has been introduced by Representative Raker, California, who has also reintroduced his bill of the last Congress providing for a tax on gold used for other than monetary purposes, and the payment of a premium to producers of newly mined gold.

A number of bills were introduced concerning mining claims, including bills to revise the present law prescribing the methods of obtaining patent mining claims; to create a United States Platinum Corporation to assist in development of the mineral resources of Alaska; the establishment of an oil shale refinery plant in Utah; and of a mine rescue station in Indiana.

The proposed "Blue Sky" bill was reintroduced by Representative Denison, of Illinois. This bill was passed by the House during the last Congress but did not receive consideration in the Senate. The bill specifically defines as a security a "certificate of interest in an oil, gas or mining lease," and would forbid the use of the mails in their behalf in any state which forbids the sale of securities. Another bill along this line was introduced by Representative McClintic, of Oklahoma, who proposes that corporations or

IMPORTANT BILLS REVIEWED IN THIS ISSUE

GENERAL MINING—
S. 937: Shortridge (R.), Calif. Dept. of Mines.
S. 179: Oddie (R.), Nev. Dept of Mines.
H. R. 112: Raker (D.), Calif. Gold Production Incentive.
S. 911: King (D.), Utah. Mining Claims.
H. R. 2861: O'Connell (D.), N. Y. Alaska Development.
S. 910: King (D.), Utah. Oil Shale Plant.
H. R. 565: Sanders (R.), Ind. Mine Rescue Stations.
H. R. 4: Denison (R.), Ill. Blue Sky.
S. 134: Ladd (R.), N. D. Commodity Dollar.

COAL—
H. R. 757: Treadway (R.), Mass. Anthracite Regulation.
H. R. 698: Luce (R.), Mass. Anthracite Standards.
H. R. 418: Rogers (R.), Mass. Export Embargo.

TAXATION—
H. R. 3221: Raker (D.), Calif. Gold Exemption.
H. R. 170: Tincher (R.), Kans. Net Loss.

INDUSTRIAL—
H. R. 690: Rosenbloom (R.), W. Va. Mine Pollution.
S. 315: Walsh (D.), Mont. Anti-Trust.
S. 812: Fletcher (D.), Fla. Export Associations.
S. 727: Johnson (R.), Calif. Colorado River.
H. R. 716: Johnson (R.), Wash. Abolish Federal Trade Commission.
H. J. Res. 85: Evans (D), Mont. Conscription in War.
S. 289: Spencer (R.), Mo. Federal Court of Conciliation.
H. R. 30: Foster (R.), Ohio. Abolish Railroad Labor Board.

OIL—
S. 872: Spencer (R.), Mo. Suspension for Overproduction.
S. Res. 11: Walsh (D.), Mont. Lease Inquiry.
S. 424: McKellar (D.), Tenn. Foreign Holdings.

TARIFF—
S. 482: Jones (R.), Wash. Increased Duty.
S. 347: Jones (D.), N. M. Raw Materials.
S. 159: Harris (D.), Ga. Free Calcium Arsenate.

IMMIGRATION—
H. R. 101: Johnson (R.), Wash. Restriction Law.

CHILD LABOR—
S. J. Res. 1: Shortridge (R.), Calif. Prohibition by Constitutional Amendment.

others dealing in securities shall file annual reports with the Federal Trade Commission.

Several bills were introduced to change the value of the dollar to the basis of the average price of commodities.

Coal Legislation

Proposed coal legislation was also dumped into the legislative hopper. President Coolidge in his message to Congress opposed government ownership or operation of coal mines, but condemned the high cost of coal and called on the industry to free itself from the charge of profiteering. He advocated amendment of rules governing car supply and encouragement of greater unity of ownership and common selling agents for limited districts, under regulation to permit unlimited competition, distribution and storage. To date no proposals have been presented carrying out the President's recommendations, but the creation of a bureau in the Interstate Commerce Commission to regulate the anthracite coal industry is provided in a bill introduced by Representative Treadway, of Massachusetts, which he will discuss in the House on January 3rd. His colleague, Representative Luce, Massachusetts, introduced a bill providing for the establishment of standards of quality of anthracite by the Bureau of Mines. Representative Rogers, of Massachusetts, introduced bills proposing to forbid the exportation of coal.

A large number of bills were introduced to forbid the discharge of oil from vessels or acids from mines and factories designed to preserve streams from pollution.

Amendment of the export trade act to permit agreements as to prices was proposed by Senator Fletcher, of Florida.

Development of power on the lower Colorado River basin, under an expenditure of $70,000,000, was proposed by Senator Johnson, of California.

Abolition of the Federal Trade Commission and the transfer of its duties to the Department of Commerce were proposed by Representative Johnson, of Washington.

Matters affecting the oil industry were covered by bills which included a proposal by Senator Spencer, of Missouri, to permit the suspension of leases on Indian lands for two years and the reduction of lease areas in cases of overproduction or inadequate prices of oil. Senator Walsh, of Montana, proposed investigation of leases to determine if persons or corporations had obtained more leases than the leasing law authorizes. Regulation of holdings of citizens of foreign countries on oil lands in the United States was also proposed.

The only definite tariff proposal, outside of a suggestion to increase the duty on goods carried in other than American vessels by 5 percent, was made by southern members to place calcium arsenate on the free list.

The conscription of money, industry and property and stabilization of prices during war was proposed in a number of bills introduced in the House.

Industrial disputes are covered in a number of measures, among them a proposal by Senator Spencer, of Missouri, to create a Federal Court of Conciliation. Another bill proposed to exempt combinations of labor from injunctions. Several bills were introduced to abolish the Railroad Labor Board.

Immigration Restriction

Revision of the immigration law was proposed, Representative Johnson, of Washington, and Senator Lodge, of Massachusetts, proposing to reduce the present quota from 3 percent to 2 percent, with a provision for selection of immigrants by the Department of Labor. Suspension of immigration for 10 years was proposed by Representative Steagall, of Alabama, while Representative Phillips, of Pennsylvania, proposed to limit immigration to 500,000 per year.

A large number of bills proposing constitutional amendments to limit child labor in mines and factories were introduced.

As finally organized the committees of the Senate and House which will have under consideration matters affecting the mining industry are as follows:

SENATE COMMITTEES

Mines and Mining—Tasker L. Oddie, Nev., chairman; Davis Elkins, W. Va.; Lawrence C. Phipps, Colo.; Ralph H. Cameron, Ariz.; Lynn J. Frazier, N.

Dak.; Thomas J. Walsh, Mont.; Henry F. Ashurst, Ariz.; Key Pittman, Nev., and William H. King, Utah.

Banking and Currency—George P. McLean, Conn., chairman; Ovington E. Weller, Md.; Peter Norbeck, S. Dak.; Samuel M. Shortridge, Calif.; Walter E. Edge, N. J.; George Wharton Pepper, Pa.; Lawrence C. Phipps, Colo.; Frank L. Greene, Vt.; Robert L. Owen, Okla.; Duncan U. Fletcher, Fla.; John B. Kendrick, Wyo.; Carter Glass, Va.; Edward I. Edwards, N. J.; Hubert D. Stephens, Miss., and Alva B. Adams, Colo.

Labor—William E. Borah, Idaho, chairman; Thomas Sterling, S. Dak.; Lawrence C. Phipps, Colo.; Smith W. Brookhart, Iowa; James Couzens, Mich.; Porter H. Dale, Vt.; Andrieus A. Jones, N. Mex.; David I. Walsh, Mass.; Thaddeus H. Caraway, Ark.; Woodbridge N. Ferris, Mich., and Royal S. Copeland, N. Y.

Finance—Reed Smoot, Utah, chairman; Robert M. LaFollette, Wis.; George P. McLean, Conn.; Charles Curtis, Kans.; James E. Watson, Ind.; David A. Reed, Pa.; Davis Elkins, W. Va.; Medill McCormick, Ill.; Richard P. Ernst, Ky.; Robert N. Stanfield, Ore.; Furnifold McL. Simmons, N. Car.; Andrieus A. Jones, N. Mex.; Peter G. Gerry, R. I.; James A. Reed, Mo.; David I. Walsh, Mass.; Pat Harrison, Miss., and William H. King, Utah.

Immigration—LeBaron B. Colt, R. I., chairman; Thomas Sterling, S. Dak.; Hiram W. Johnson, Calif.; Henry W. Keyes, N. H.; Frank B. Willis, Ohio; David A. Reed, Pa.; William H. King, Utah; William J. Harris, Ga.; Pat Harrison, Miss.; John K. Shields, Tenn., and Royal S. Copeland, N. Y.

Indian Affairs—J. W. Harreld, Okla., chairman; Charles Curtis, Kans.; Robert M. LaFollette, Wis.; Charles L. McNary, Ore.; Ralph H. Cameron, Ariz.; Lynn J. Frazier, N. Dak.; Henry F. Ashurst, Ariz.; Robert L. Owen, Okla.; John B. Kendrick, Wyo.; Burton K. Wheeler, Mont., and C. C. Dill, Wash.

Interstate Commerce—....., Chairman; Robert M. La Follette, Wis.; George P. McLean, Conn.; James E. Watson, Ind.; Bert M. Fernald, Me.; Davis Elkins, W. Va.; Frank R. Gooding, Idaho; James Couzens, Mich.; Simeon D. Fess, Ohio; Robert B. Howell, Nebr.; Ellison D. Smyth, S. C.; Oscar W. Underwood, Ala.; Key Pittman, Nev.; William Cabel Bruce, Md.; C. C. Dill, Wash.; Burton K. Wheeler, Mont., and Earl B. Mayfield, Tex.

Judiciary—Frank B. Brandegee, Conn., chairman; William E. Borah, Idaho; Albert B. Cummins, Iowa; LeBaron B. Colt, R. I.; Thomas Sterling, S. Dak.; George W. Norris, Neb.; Richard P. Ernst, Ky.; Samuel M. Shortridge, Calif.; Selden P. Spencer, Mo.; Lee S. Overman, N. Dak.; James A. Reed, Mo.; Henry F. Ashurst, Ariz.; John K. Shields, Tenn.; Thomas J. Walsh, Mont.; Augustus O. Stanley, Ky., and Thaddeus H. Caraway, Ark.

Manufactures—Robert M. LaFollette, Wis., chairman; Charles L. McNary, Ore.; William B. McKinley, Ill.; Ovington E. Weller, Md.; David A. Reed, Pa.; Smith W. Brookhart, Iowa; Ellison D. Smith, S. C.; James A. Reed, Mo.; William J. Harris, Ga.; Edward I. Edwards, N. J., and Burton K. Wheeler, Mont.

Patents—Richard P. Ernst, Ky., chairman; George W. Norris, Neb.; Frank B. Brandegee, Conn.; LeBaron B. Colt, R. I.; Ellison B. Smith, S. C.; Augustus O. Stanley, Ky.; Edwin S. Broussard, La., and Henrik Shipstead, Minn.

Public Lands and Surveys—Irvin L. Lenroot, Wis., chairman; Reed Smoot, Utah; Edwin F. Ladd, N. Dak.; Robert N. Stanfield, Ore.; Peter Norbeck, S. Dak.; Holm O. Bursum, N. Mex.; Ralph H. Cameron, Ariz.; Key Pittman, Nev.; Andrieus A. Jones, N. Mex.; John B. Kendrick, Wyo.; Thomas J. Walsh, Mont.; Alva B. Adams, Colo., and C. C. Dill, Wash.

HOUSE COMMITTEES

Mines and Mining—John M. Robsion, Ky., chairman; William Williamson, S. Dak.; Don B. Colton, Utah; James H. MacLafferty, Calif.; Charles E. Winter, Wyo.; W. H. Sproul, Kans.; Scott Leavitt, Mont.; George F. Brumm, Pa.; Joe J. Manlove, Mo.; George K. Favrot, La.; Arthur H. Greenwood, Ind.; Herbert W. Cummings, Pa.; Thomas J. Lilly, W. Va.; Charles L. Richards, Nev.; Mell G. Underwood, Ohio, and Delegate Dan A. Sutherland, Alaska.

Banking and Currency—Louis T. McFadden, chairman, Pa.; Edward J. King, Ill.; James G. Strong, Kans.; Robert Luce, Mass.; Clarence MacGregor, N. Y.; E. Hart Fenn, Conn.; Guy E. Campbell, Pa.; Elmer O. Letherwood, Utah; Carroll L. Beedy, Me.; William Williamson, S. Dak.; Morton D. Hull, Ill.; Arthur B. Williams, Mich.; Otis Wingo, Ark.; Henry R. Steagall, Ala.; Charles H. Brand, Ga.; William F. Stevenson, S C.; Eugene Black, Tex.; T. Alan Goldborough, Md.; Charles A. Mooney, Ohio; Anning S. Prall, N. Y.; Harry C. Canfield, Ind.

Coinage, Weights and Measures—Albert H. Vestal, chairman, Ind.; Florian Lampert, Wis.; R. Clint Cole, Ohio; Randolph Perkins, N. J.; Charles L. Gifford, Mass.; Thomas W. Phillips, Jr., Pa.; George F. Brumm, Pa.; John C. Schafer, Wis.; O. J. Kvale, Minn.; Dan A. Sutherland, Alaska; B. G. Lowrey, Miss.; Charles L. Abernethy, N. C.; George K. Favrot, La.; Samuel E. Cook, Ind.; R. Lee Moore, Ga.; Edgar Howard, Neb., and J. Scott Wolff, Mo.

Immigration—Albert Johnson, chairman, Wash.; J. Will Taylor, Tenn.; William N. Vaile, Colo.; Hays B. White, Kans.; Arthur M. Free, Calif.; John L. Cable, Ohio; William P. Holaday, Ill.; Bird J. Vincent, Mich.; William I. Swoope, Pa.; Robert L. Bacon, N. Y.; Adolph J. Sabath, Ill.; John E. Raker, Calif.; Riley J. Wilson, La.; John C. Box, Texas; Samual Dickstein, N. Y.; S. D. McReynolds, Tenn., and Elton Watkins, Ore.

Indian Affairs—Homer P. Snyder, chairman, N. Y.; Royal C. Johnson, S. Dak.; Frederick W. Dallinger, Mass.; R. Clint Cole, Ohio; Sidney C. Roach, Mo.; Scott Leavitt, Mont.; M. C. Garber, Okla.; W. H. Sproul, Kans.; George F. Brumm, Pa.; Grant M. Hudson, Mich.; Gale H. Stalker, N. Y.; Dan A. Sutherland, Alaska; Carl Hayden, Ariz.; William J. Sears, Fla.; Zebulon Weaver, N. C.; John M. Evans, Mont.; William W. Hastings, Okla.; Everett B. Howard, Okla.; Edgar Howard, Nebr.; Sam B. Hill, Wash. and John Morrow, N. Mex.

Interstate and Foreign Commerce—Samuel E. Winslow, chairman, Mass.; James S. Parker, N. Y.; John G. Cooper, Ohio; Edward E. Denison, Ill.; Everett Sanders, Ind.; Schuyler Merritt, Conn.; Carl E. Mapes, Mich.; William J. Graham, Ill.; Walter H. Newton, Minn.; Homer Hoch, Kans.; Adam M. Wyant, Pa.; Olger B. Burtness, N. Dak.; Alben W. Barkley, Ky.; Sam Rayburn, Tex.; George Huddleston, Ala.; Clarence F. Lea, Calif.; Harry B. Hawes, Mo.; Tillman B. Parks, Ark.; Robert Crosser, Ohio; Ashton C. Shallenberger, Neb., and Parker Corning, N. Y.

Judiciary—George S. Graham, chairman, Pa.; Robert Y. Thomas, Jr., Ky.; Hatton W. Summers, Tex.; Andrew J. Montague, Va.; James W. Wise, Ga.; John N. Tillman, Ark.; Fred H. Dominick, S. C.; Samuel C. Major, Mo.; Royal H. Weller, N. Y.; Patrick B. O'Sullivan, Conn.; Leonidas C. Dyer, Mo.; William D. Boles, Iowa; Charles A. Christopherson, S. Dak.; Richard Yates, Ill.; Ira G. Hersey, Me.; Israel M. Foster, Ohio; Earl C. Michener, Mich.; Andrew J. Hickey, Ind.; Nathan D. Periman, N. Y.; Oscar J. Larson, Minn., and J. Banks Kurtz, Pa.

Labor—Frederick N. Zihlman, chairman, Md.; Joseph D. Beck, Wis.; Mae E. Nolan, Calif.; E. Hart Fenn, Conn.; William F. Kopp, Iowa; Joe J. Manlove, Mo.; George A. Welsh, Pa.; Victor L. Berger, Wis.; William D. Upshaw, Ga.; J. Frank McNulty, N. J.; William P. Connery, Jr., Mass.; J. Earl Major, Ill.; Meyer Jacobstein, N. Y., and Luther A. Johnson, Tex.

Patents—Florian Lampert, chairman, Wis.; Albert H. Vestal, Ind.; Randolph Perkins, N. J.; Clarence J. McLeod, Mich.; Thomas W. Phillips, Jr., Pa.;

Knud Wefald, Minn.; Fritz G. Lanham, Tex.; William C. Hammer, N. C.; Samuel E. Cook, Ind.; Sol Bloom, N. Y.; R. E. L. Allen, W. Va., and J. B. Reed, Ark.

Public Lands—Nicholas J. Sinnott, chairman, Ore.; Addison T. Smith, Idaho; Hays B. White, Kans.; William N. Vaile, Colo.; Don B. Colton, Utah; Charles L. Faust, Mo.; Charles E. Winter, Wyo.; Scott Leavitt, Mont.; John D. Fredericks, Calif.; Arthur B. Williams, Mich.; Frederick G. Fleetwood, Vt.; John E. Raker, Calif.; William J. Driver, Ark.; Lamar Jeffers, Ala.; Charles L. Abernethy, N. C.; John M. Evans, Mont.; Sam B. Hill, Wash.; Elmer Thomas, Okla.; Charles L. Richards, Nev.; John Morrow, N. Mex., and William P. Jarrett, Hawaii.

Rivers and Harbors—S. Wallace Dempsey, chairman, N. Y.; Richard P. Freeman, Conn.; Nathan L. Strong, Pa.; Cleveland A. Newton, Mo.; James J. Connolly, Pa.; M. A. Michaelson, Ill.; Walter F. Lineberger, Calif.; William M. Morgan, Ohio; William E. Hull, Ill.; George N. Seger, N. J.; Hubert H. Peavy, Wis.; Thaddeus C. Sweet, N. Y.; H. Garland Dupre, La.; Joseph J. Mansfield, Tex.; John McDuffie, Ala.; John J. Kindred, N. Y.; Homer L. Lyon, N. C.; Joseph T. Deal, Va.; Daniel F. Minahan, N. J.; William E. Wilson, Ind., and William H. Boyce, Del.

Ways and Means—William R. Green, chairman, Iowa; Willis C. Hawley, Ore.; Allen T. Treadway, Mass.; George M. Young, N. Dak.; James A. Frear, Wis.; John Q. Tilson, Conn.; Isaac Bacharach, N. J.; Lindley H. Hadley, Wash.; Charles B. Timberlake, Colo.; Henry W. Watson, Pa.; Ogden L. Mills, N. Y.; James C. McLaughlin, Mich.; Charles C. Kearns, Ohio; Carl R. Chindblom, Ill.; Frank Crowther, N. Y.; John N. Garner, Tex.; James W. Collier, Miss.; William A. Oldfield, Ark.; Charles R. Crisp, Ga.; John F. Carew, N. Y.; Whitmell P. Martin, La.; Peter F. Tague, Mass.; Henry T. Rainey, Ill.; Cordell Hull, Tenn.; Clement C. Dickinson, Mo., and John J. Casey, Pa.

The following review carries a résumé of all important measures of interest to mining:

GENERAL MINING

Department of Mines

S. 937. Introduced by Mr. Shortridge (Rep., Cal.). Referred to the Committee on Mines and Mining. This bill proposes to create a Department of Mines with a secretary and assistant secretary, to foster, promote, and develop mineral resources, and the mining metallurgical and mineral technological industries; increase safety in mines and works related to minerals; classify public lands; investigate power resources and promote power development; inspect and regulate mines and mineral industries operating under lease, and to investigate the relations of mineral industries to the national defense. The bill abolishes the Federal Power Commission; transfers to this new department the present Bureau of Mines, Geological Survey, War Minerals Relief Commission, such parts of the General Land Office and Indian Office as relate to field examination of mineral land for inspection or regulation of mines or mineral industries on public or Indian lands; from the Bureau of Standards functions on mineral products in a raw or semi-finished state; records of the Fuel Administration, Fuel Administrator, Coal Commission, War Industries Board, War Trade Board and Shipping Board relating to mines, minerals, metals and mineral industries; and the California Debris Commission. The bill creates within the department special bureaus on mineral industry, whose heads shall be appointed by the President, to have charge of relations of mineral resources and development at home and abroad; mine and explosives inspection service to enforce regulations relative to mining or mineral industries upon public and Indian lands; and a Board of Power Development.

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SENATE COMMITTEE ON MINES AND MINING
Senator Tasker L. Oddie, chairman (oval). Upper row—Senators Key Pittman, H. F. Ashurst and Ralph H. Cameron. Middle row—Senators Davis Elkins and L. J. Frazier. Bottom row—Senators L. C. Phillips, Thos. J. Walsh and William H. King

S. 179. Introduced by Mr. Oddie (Rep., Nev.). Referred to the Committee on Mines and Mining. It proposes to establish a Department of Mines for the purpose of fostering, promoting and developing mining, the mining industry and the mineral resources of the United States. The department would collect, through scientific and economic investigation and research information thereon, and on the domestic and foreign marketing of minerals and mineral products. The investigations and research would include the extraction, preparation, treatment, transportation and storage of mineral fuels for domestic uses and gases and other minerals for use in the national defense. The department would be in charge of a Secretary of Mines, and an Assistant Secretary. The bill transfers to the department the duties of other departments relating to mining, including the Geological Survey and the Bureau of Mines. It appropriates $50,000.

Gold Production Incentive

H. R. 112. Introduced by Mr. Raker (Dem., Calif.). Referred to the Committee on Ways and Means. This is similar to the bill introduced in the last Congress by Mr. Raker and also by Rep. McFadden (Rep., Pa.) providing for the protection of the monetary gold reserve by imposing a tax on gold used for other than monetary purposes, and to pay a premium to producers of newly mined gold.

Mining Claims

S. 911. Introduced by Mr. King (Dem., Utah). Referred to the Committee on Mines and Mining. It amends sections 2325 and 2326 of the Revised Statutes, prescribing the methods of obtaining patent to mining claims, to read as follows:

"Section 2325. A patent for any land claimed and located for valuable deposits may be obtained in the following manner: Any person, association or corporation authorized to locate a claim under this chapter, having claimed and located a piece of land for such purposes, who has complied with the terms of this

chapter, shall prepare a statement under oath showing such compliance, together with a plat and field notes of the claim or claims in common made by or under the direction of the United States Surveyor General, showing accurately the boundaries of the claims or claims, which shall be distinctly marked by monuments on the ground, together with his application for patent, and shall post a copy of such plat, together with a notice of his application for a patent, in a conspicuous place on the land, and shall thereafter file a copy together with an affidavit of at least two persons that such notice has been duly posted, and a copy of the notice in the proper land office, and in a court of competent jurisdiction as and for a complaint or declaration, setting forth that he has located certain claims described in the complaint and set forth in the plat attached to such complaint and has performed all the acts necessary to entitle the claimant to a patent. Service of a summons or order to show cause shall thereupon be made upon the register of the proper land office and upon all persons shown by the records of the land office to have made any entry which may conflict with the said claim or claims and upon all other persons who may be actually claiming possession of said land. The register of the land office upon receiving such summons or order to show cause shall advise the Commissioner of the General Land Office of such service and the commissioner shall thereupon make such answer and take such steps as he may be advised to protect the interests of the United States in such proceedings, and if such lands are not open to entry, or the applicant for patent has not complied with the provisions of law with respect thereto, or there is any other reason why such claimant is not entitled to a patent for such claims, it shall be the duty of the Commissioner of the General Land Office to set up such matters as defenses by answer or pleading on behalf of the United States, denying that such claimant is entitled to a patent as applied for, and it shall be the duty of the commissioner to appear, or be represented, at the trial of said cause in behalf of the United States. Upon the filing of such complaint, claimant shall publish a notice for sixty days that he is applying for a patent for certain mining claims, fully describing the same and giving notice to all persons who may have any adverse claims to present the same by answer or pleading in such proceedings. After the service of summons and after publication of notice, and proof of such publication having been filed with the court, and after the applicant shall have filed his affidavits, the court shall appoint a day for the hearing of such proceeding, at which hearing the applicant shall present proof of his compliance with the law relating to the location and improvement of mining claim, that the land is mineral in character, and that he has made an actual discovery of mineral thereon, and that he has made improvements to the value of at least $500 as provided by law, together with any other facts necessary to entitle the applicant to a patent. If there are adverse claims to possession, the court shall determine the right of possession as between the adverse claimants, and after the United States shall have presented any evidence the Commissioner of the General Land Office shall have deemed proper, bearing upon the right of the applicant to title as against the United States, the court shall make its decision in the premises, which shall be a finding of the necessary facts and a judgment as to whether or not the applicant is entitled to patent. No objection from third parties to the issuance of a patent shall thereafter be heard, except it shall be shown that the applicant has failed to comply with the terms of this chapter.

Sec. 2326. After such finding and judgment shall have been made, the party entitled to have patent to the claim, or any portion thereof, may, without giving further notice, file a certified copy of the judgment roll with the register of the land office, and shall pay to the receiver $5 per acre for his claim, together with the proper fees, whereupon the whole proceedings and the judgment roll shall be transmitted by the register to the Commissioner of the General Land Office, and a patent shall issue thereon for the claim, or such portion thereof as the applicant shall appear from the decision of the court to rightly possess. If it appears from the decision of the court that several parties are entitled to different portions of the claim, each party may pay for his portion of the claim with the proper fees and file the description by the surveyor general, whereupon the register shall certify the proceedings and the judgment roll to the Commissioner of the General Land Office, as in the preceding case, and patents shall issue to the several parties according to their respective rights. Nothing herein contained shall be construed to prevent the alienation of a title conveyed by a patent for a mining claim to any person whatsoever."

Mine Leases

S. 686. Introduced by Mr. Smoot (Rep. Utah). Referred to the Indian Committee. It provides for 20-year mining leases on Indian reservations in Arizona, New Mexico and Utah.

H. R. 177. Introduced by Mr. Thomas (Dem., Okla.). Referred to the Committee on Agriculture. It proposes to lease for mining purposes land in the Wichita National Forest and Game Preserve.

H. R. 120. Introduced by Mr. Raker (Dem., Calif.). Referred to the Committee on Appropriations. It appropriates $200,000 for the California Debris Commission for regulation of hydraulic mining in California.

Alaska Mines

H. R. 2861. Introduced by Mr. O'Connell (Dem., N. Y.). (By request.) Referred to the Committee on Public Lands. It proposes to incorporate the U. S. Platinum Corp. to aid in development of mineral resources of Alaska. L. R. Beckley and associates are named as incorporators, with power to locate and enjoy leases and concessions to all platinum sands owned by the government on public lands in Alaska. The corporation would have 20 commissioners and would be authorized to issue $50,000,000 stock in shares of $100 each. The bill provides for appointment by Congress of five persons to be known as the United States Government commissioners of platinum and its allied industries. The bill appropriates $100,000.

Oil Shale Plant

S. 910. Introduced by Mr. King (Dem., Utah). Referred to the Committee on Mines and Mining. It proposes the construction of an experimental petroleum shale refining plant at Ogden or Salt Lake at a cost of $500,000, for the purpose of investigating and developing methods for extraction of petroleum from oil shale in order to increase the supply of petroleum. The station would be under the supervision of the Bureau of Mines.

Interior Department in West

S. 904. Introduced by Mr. King (Dem., Utah). Referred to the Committee on Public Lands. It proposes to establish a branch of the Interior Department at Salt Lake to which would be transferred from Washington the offices of the Commissioner General of the Land Office, Geological Survey and Bureau of Mines. It appropriates $1,000,000 and also provides for administration by the Interor Department of the national forests. The bill would take effect January 1, 1925.

Mine Exposition

H. R. 480. Introduced by Mr. Davis (Rep., Minn.). Referred to the Committee on Expositions. It proposes to establish in Washington, D. C., an International Exposition of the United States in the interest of mining, commerce, industry, agriculture, labor, education, arts and science. Building sites in connection with the exposition would be available to states and foreign governments. It would be managed by a board of ten members of Congress and an ad-

visory board of state governors. The bill appropriates $100,000.

Mineral Lands

S. 671. Introduced by Mr. Smoot (Rep., Utah). Referred to the Committee on Public Lands. This bill concerns title to lands granted to the states for public school purposes. It provides that where lands so designated have been purchased from any state and are found by the courts or the Interior Department to have been of known mineral character at the time the grant to the state would have otherwise attached, the transferees of the state shall have a right to a confirmatory patent from the United States with reservation of the mineral deposits in the land to the United States upon payment of $1.25 per acre, or to a patent without such reservation upon payment of the appraised price of the land.

H. R. 2907. Introduced by Mr. Taylor (Dem., Colo.). Referred to the Committee on Public Lands. It provides that whenever public land not classified or known to be valuable for mineral is entered by a homesteader the mineral deposits shall not be covered in permits, leases or entries unless the applicant for permit or lease secures consent of the homesteader and pays him damages for injuries to crops or improvements.

S. 510. Introduced by Mr. Ashurst (Dem., Ariz.). Referred to the same committee. It appropriates $200,000 for survey of public lands in Arizona.

S. 377. Introduced by Mr. Jones (Dem., N. Mex.). Referred to the Committee on Public Lands. It would prevent the creation of new, or addition to, existing forest reservations in New Mexico and Arizona, except by act of Congress.

Helium Production

H. R. 756. Introduced by Mr. Kahn (Rep., Calif.). Referred to the Committee on Military Affairs. This bill places under the jurisdiction of the Interior Department, with an appropriation of $5,000,000, the conservation, production and exploitation of helium gas.

Rescue Station

H. R. 565. Introduced by Mr. Sanders (Rep., Ind.). Referred to the Committee on Mines and Mining. It appropriates $7,800 for establishment of a mine rescue station at Terre Haute, Ind.

"Blue Sky"

H. R. 4. Introduced by Mr. Denison (Rep., Ill.). Referred to the Committee on Interstate Commerce. This is the so-called "blue sky" bill introduced in the 67th Congress, which seeks to prevent the use of the mails and other agencies of interstate commerce for transporting and promoting or procuring the sale of securities contrary to the laws of the states. The bill specifically defines as a "security" a "certificate of interest in an oil, gas, or mining lease." The bill would make it unlawful for any person in any state to place in the mails, railroads, express companies, or other agencies, any security for sale to any person in any other state in which it is unlawful to sell such security. The prohibition would also apply to the issuance through such transportation agencies of any letter or circular soliciting the sale of securities. The bill exempts securities of the United States and foreign governments, railroad securities, education securities, securities listed on exchanges in cities of over 500,000 population, securities of incorporated banks, bonds on agricultural lands, but "not including oil, gas or mining property or leases"; when a mortgage is sold to a single purchaser as a single sale, and mortgages on agricultural and city real estate. The bill proposes a fine of $2,000 or imprisonment for 2 years for the first offense and $5,000 and 5 years imprisonment for subsequent offenses. Enforcement of the law would be under the Department of Justice.

H. R. 80. Introduced by Mr. McClintic (Dem., Okla.). Referred to the Committee on Interstate Commerce. It would require persons, partnerships, or corporations who offer for sale stocks, bonds and securities to file with the Federal Trade Commission initial and annual reports as to their business.

SENATE COMMITTEE ON IMMIGRATION

Senator Le Baron B. Colt, chairman (oval). Top—Senators Thos. Sterling, H. W. Keyes and Hiram W. Johnson. Middle—Senators F. B. Willis and Wm. H. King. Bottom—Senators D A. Reed, J. K. Shields, Royal S. Copeland, W. J. Harris and Pat Harrison

CURRENCY

Commodity Dollar

S. 134. Introduced by Mr. Ladd (Rep., N. Dak.). Referred to the Committee on Banking and Currency. It provides for establishment of an "honest money" system where the medium of exchange would give equal benefits to every citizen and wherein the lawful money of the government would be used for the benefit of all the people instead of banking corporations. It establishes a loan bureau in the Treasury with branches in postal savings banks to lend funds at not more than 4 percent. It proposes that "as the value of the dollar is not in the dollar but what the dollar will buy" the volume of money shall be regulated by the average price of necessities of life.

H. R. 494. Introduced by Mr. Goldsborough (Dem., Md.). Referred to the Committee on Banking and Currency. It proposes to stabilize the purchasing power of money by basing the value of the dollar on commodity prices computed by the Bureau of Labor Statistics.

H. R. 433. Introduced by Mr. Burtness (Rep., N. Dak.). Referred to the Committee on Banking and Currency. It proposes to stabilize the buying power of money, by providing that the weight of the gold dollar shall be subject to a gauge of its buying power, although its actual weight would not be changed. It would establish a monetary standard division in the Treasury Department

which would base the buying power of the dollar on commodity prices. The bill proposes to abolish the mintage of gold coins and silver dollars and instead to mint gold and silver into bars.

H. R. 88. Introduced by Mr. MacGregor (Rep., N. Y.). (By request.) Referred to the Committee on Coinage, Weights and Measures. It proposes to establish a gold and silver currency on a basis of interchangeable value. It prescribes 23.21 grains of pure gold as a dollar and unit of money. Gold bullion may be deposited with the Treasury, mints or assay offices for conversion into gold assay bars, the depositor to receive gold Treasury notes in denominations of $1, $2, $5, $10, $20, $50, $100, $500, $1,000, $5,000, $10,000, $20,000 $50,000 and $100,000. Silver bullion would similarly be converted into bars and paid for in silver Treasury notes on the basis of the market price per ounce of 480 grains, the price to be determined by the Treasury Department on the basis of world market prices. Silver notes would be in the same denomination as gold notes. Gold coins would be issued in denominations of $5, $10, and $20 and silver coins in dimes, quarters, half-dollars, seventy-five cent pieces and dollars.

Silver Coinage

S. 684. Introduced by Mr. Smoot (Rep., Utah). Referred to the Committee on Finance. It proposes the coinage of five million 50-cent pieces in commemoration of the carving of the memorial to Civil War veterans on Stone Mountain, Ga.

COAL

Anthracite Regulation

H. R. 757. Introduced by Mr. Treadway (Rep., Mass.). Referred to the Committee on Interstate Commerce. This bill proposes the regulation of the anthracite coal industry by a bureau in the Interstate Commerce Commission. It creates an anthracite coal bureau in the I. C. C. Commerce in anthracite is affected with a national public interest since anthracite is a necessity of life to the people in many states; the supply lies entirely in a restricted area in a single state; more than 80 percent mined and sold or transported in commerce; the employes belong to a single union; a few large corporations control its production and shipment in commerce and fix prices in their own interest and without regard to the needs of the communities depending on the supply and so restrict and burden the normal flow of commerce; and therefore regulation of commerce in anthracite is imperative for the protection of such commerce and the national public interest therein. The director of the bureau would be appointed by the I. C. C. at not exceeding $7,000 yearly salary. It is provided that no person engaged in producing or dealing in fuel, except wood, or owning any interest in property containing fuel, or in fuel, or in the employ of any such person, shall be appointed director. Every dealer would be required to file with the bureau his address and place of business and designate an agent in the District of Columbia upon whom service and statements could be made. Agents may be employes of the bureau designated by the director. Each dealer shall be registered serially, which registration may be revoked or suspended upon conviction or violation of this act or the federal trade commission act. The bureau shall on July 1st yearly order the proportion of anthracite which may be received in each state during the year beginning the following January; establish and change standards of size, quality and condition of anthracite; collect and report to Congress annually and at other times as Congress or its committees may request, and publish annually and at other times facts concerning the amount and costs of production of anthracite, preparation for shipment and conditions of production of anthracite; freight rates and other changes connected with and the destinations, both immediate and ultimate, of anthracite shipments, and the costs connected with buying, selling and shipping anthracite, including costs of handling or grading in transit or at terminals. The bureau would prepare and transmit to the President, and at its discretion upon request of the chief executive of any state or subdivision, any information (except trade secrets and names of customers) obtained under this act.

Before fixing proportions of anthracite to be received in any state the director would hold public hearings. He will take into consideration the average amount of anthracite used in such state and in any other states using anthracite during the past five years; other sources of supply of fuel; means of transportation; estimated increase in use for the next five years; average production for the past five years and other pertinent facts. Changes in proportions will be made after hearing. No dealer could ship to any state in excess of the proportion fixed. Permits to ship would be issued by the bureau subject to revocation, suspension or modification whenever shipments are less than the proportion. Dealers could not ship anthracite not of a grade fixed as a standard by the director, except in shipments to foreign countries. Violations of these regulations would subject the offender to a penalty of $100 for each carload or less than carload shipped. Appeals may be taken from orders of the bureau to the circuit court of appeals of the District of Columbia and the Supreme Court.

The bill declares it to be "necessary that information in respect to commerce in and production and distribution of anthracite be collected and prepared for the information and use of Congress and its committees to aid in determining legislative policies and in drafting legislation for the use of the Interstate Commerce Commission in carrying out this act and for the use of the Census Bureau and to insure a proper supply of anthracite for the army and navy and carriers in commerce."

The bill authorizes the director of the coal bureau to require annual reports from all dealers and operators of anthracite mines, prescribing the time and manner in which they shall be made, and to require specific answers to all questions upon which he may need information. These reports shall show in detail, in the case of a corporation, the amount of capital stock issued and dividends paid thereon; and in the case of any person, as well as a corporation, the cost and value of the property devoted to the business as a dealer or operator, including the value of his interest in any anthracite mine or in any lease of anthracite bearing land; amount expended for improvements each year, how expended and their character; earnings and receipts from the business; operating and other expenses, including royalties; balances of profit and loss; a complete exhibit of the financial operations of the person reporting, including an annual balance sheet, and such other information as the director may require. Failure to make report or specific answer to any questions authorized by this act will subject the offender to a fine of $100 per day. A person buying anthracite in commerce for his own use shall be required to file only a report showing the location, nature and annual consumption of his plant.

The commission is given power to make investigation with respect to production of, commerce in, and distribution of anthracite when requested by Congress or its committees, or whenever or wherever necessary to carry out the act, the commission having power to delegate this authority to the director of the coal bureau. The bureau will issue a weekly statement showing the amount of anthracite shipped to each state, and that mined up to the end of the preceding week, and for this purpose it may require such statements as necessary from dealers and operators, failure to comply subjecting the offender to the penalty above noted. The Bureau of Mines, Geological Survey, and Federal Trade Commission are required to cooperate with the coal bureau, which shall have access to any information in their possession for the purposes of this act. The Bureau of Mines, at the request of the director of the coal bureau, shall prepare a plan

for fixing standards of size, quality and conditions of anthracite, and give such aid in carrying out the act as is compatible with its other duties. The coal bureau will cooperate with the officers of any state charged with enforcement of any law with respect to mining, transportation, dealing in, or distribution of anthracite. The commission may report violations of the act to the Attorney General for court proceedings without delay. No specific appropriation is made for expenses of the coal bureau, the bill prescribing such sums as may be necessary. It is provided that if any provision of the act or its application to any person, transaction, class of transactions or circumstances is held invalid, the validity of the remainder of the act to transactions shall not be affected.

Anthracite Standards

H. R. 698. Introduced by Mr. Luce (Rep., Mass.). Referred to the Committee on Interstate Commerce. It authorizes the Bureau of Mines to prescribe standards of quality of domestic anthracite coal. Penalties of $200 for the first offense and $300 for subsequent offenses or imprisonment for not exceeding one year are provided for violation of the law.

Strike Prevention

H. R. 436. Introduced by Mr. Blanton (Dem., Tex.). Referred to the Committee on Interstate Commerce. It would make it unlawful for 2 or more persons to enter into any combination or agreement to prevent, hinder, or restrain any person from seeking and engaging in work connected with the mining of coal or to prevent the movement of such coal. An offender would be punished by a fine of $5,000 and imprisonment of not more than 2 years.

Export Embargo

H. R. 418. Introduced by Mr. Rogers (Rep., Mass.). Referred to the Committee on Interstate Commerce. The bill states that the present conditions in the production and distribution of anthracite constitute a national emergency, and proposes to declare it unlawful to export anthracite to any foreign country. The President could, by proclamation, lift the embargo. Violation of the law would be subject to a fine of $10,000 or imprisonment for 1 year.

H. R. 15. Introduced by Mr. Rogers (Rep., Mass.). Referred to the Committee on Interstate Commerce. It proposes that whenever the President shall find that the public interest requires it, he may be authorized to declare an embargo on the exportation of coal.

North Dakota Rates

H. Res. 48. Introduced by Mr. Newton (Rep., Minn.). Referred to the Committee on Rules. This bill provides for an investigation by the House Committee on Interstate Commerce of a recent advance of 50 percent in freight rates on lignite coal from North Dakota.

Special Committee

H. Res. 53. Introduced by Mr. Treadway (Rep., Mass.). Referred to the Committee on Rules. It proposes the appointment of a special committee for the present Congress to be known as the "Select committee on the coal industry," consisting of eleven members.

TAXATION

Gold Exemption

H. R. 3221. Introduced by Mr. Raker (Dem., Calif.). Referred to the Committee on Ways and Means. It proposes to exempt from income tax income derived from the mining of gold.

Corporation Taxes

H. R. 2691. Introduced by Mr. Watkins (Dem., Ore.). Referred to the Committee on Ways and Means. It proposes to pay a soldier bonus, to bet met by taxes as follows: $250 poll tax on immigrants; $50 poll tax on alien residents; 2 percent tax on gross incomes of foreign corporations in the United States; inheritance and excess profits taxes, the latter including 5 percent on net income in excess of 10 percent of capital; 10 percent on income in excess of 20 percent; 15 percent on income in excess of 25 percent, and 20 percent on net income in excess of 33 percent of capital.

S. 744. Introduced by Mr. Brookhart (Rep., Iowa). Referred to the Committee on Finance. It proposes the following taxes on corporations for the years from 1917 on: 10 percent on incomes up to $20,000; 20 percent on incomes up to $100,000; 30 percent on incomes up to $200,000 and 50 percent on incomes above that amount.

Tax Conference

S. J. Res. 30. Introduced by Mr. King (Dem., Utah). Referred to the Committee on Finance. It provides for a conference of representatives of the Federal and state governments to consider questions relative to taxation and cooperation between Congress and the states in imposing taxes.

Securities Levy

H. J. Res. 1. Introduced by Mr. Green (Rep., Iowa). Referred to the Committee on Ways and Means. This bill proposes a constitutional amendment to tax securities now exempt.

Net Loss

H. R. 170. Introduced by Mr. Tincher (Rep., Kan.). Referred to the same committee. This bill provides for deduction of net loss under the income tax, providing as follows:

"If for any taxable year beginning after December 31, 1919, it appears upon the production of evidence satisfactory to the commissioner that any taxpayer has sustained a net loss, the amount of such net loss shall, under regulations prescribed by the commissioner, with the approval of the Secretary, be deducted from the net income of the taxpayer for the preceding taxable year; and the taxes imposed by this act or by Title 111 of the Revenue Act of 1918 for such preceding taxable year shall be redetermined accordingly. Any amount found to be due to the taxpayer upon the basis of such redetermination shall be credited or refunded to the taxpayer in accordance with the provisions of section 252 of the Revenue Act of 1918. If such net loss is in excess of the net income for such preceding taxable year the amount of such excess shall, under regulations prescribed by the commissioner, with the approval of the Secretary, be allowed as a deduction in computing the net income for the succeeding taxable year."

Valuation Inquiry

H. Con. Res. 2. Introduced by Mr. Vaile (Rep., Colo.). Referred to the Committee on Coinage, Weights and Measures. This resolution provides for an investigation by the Bureau of Standards of the subject of value and relative value. It is based on an alleged lack of uniformity in determining value, which is said to result in confusion and inequality in taxation. The bureau is asked to recommend a plan whereby value and relative value of all things shall be determined in order to eliminate inequalities in valuations for revenue and other purposes. The bureau is requested to consider studies along this line made by Dr. Napoleon Wagner, of Denver. It is also proposed to determine the daily purchasing power of the present gold dollar. An appropriation of $25,000 is provided.

Exemptions and Refunds

S. Res. 56. Introduced by Mr. King (Dem., Utah). Referred to the Committee on Finance. It proposes an investigation by the committee as to tax-exemption and tax-refund claims decided or pending before the Internal Revenue Bureau, and as to the advisability of establishment of a court or public tribunal to handle such claims.

INDUSTRIAL

Mine Pollution

H. R. 690. Introduced by Mr. Rosenbloom (Rep., W. Va.). Referred to the Committee on Rivers and Harbors. This bill proposes to forbid the deposit of acid materials from mines or factories into navigable waters. The bill would prohibit, regulate or provide for the treatment of such acid from any active or abandoned mine or factory so as to destroy its acidity. The army engineers would consult and advise with owners of

coal mines as to means of rendering harmless the waste or refuse therefrom. Violation of the law would subject the offender to a fine of from $500 to $2,500 or imprisonment for 30 days or 1 year.

H. R. 3319. Introduced by Mr. Mills (Rep., N. Y.). Referred to the Committee on Rivers and Harbors; proposes to make it unlawful to discharge oil from vessels, mines or factories into coastal navigable waters.

H. R. 51. Introduced by Mr. Bacharach (Rep., N. J.). Referred to the Committee on Rivers and Harbors. It forbids the discharge of oil upon coastal navigable waters except under regulations of the War Department. Violation of the law would subject the offender to fine and imprisonment.

H. R. 612. Introduced by Mr. Lineberger (Rep., Calif.). Referred to the Committee on Rivers and Harbors. This is similar to other bills introduced for this purpose, except that it provides for administration of the act by the Department of Commerce, which is authorized to investigate other polluting substances and to recommend legislation for its prevention.

H. R. 203. Introduced by Mr. Bland (Dem., Va.). Referred to the Committee on Rivers and Harbors. It forbids the discharge of oil or refuse matter from vessels or factories into navigable waters, except under permit of the War Department.

S. 42. Introduced by Mr. Lodge (Rep., Mass.). Referred to the Committee on Commerce. It forbids the discharge from vessels or factories of oil or refuse and provides fine of from $500 to $1,500 and imprisonment from 30 days to 1 year for its violation.

Metric System

S. 100. Introduced by Mr. Ladd (Rep., N. Dak.). Referred to the Committee on Manufactures. This proposes the extension of the use of metric system of weights and measures under regulation of the Department of Commerce.

H. R. 10. Introduced by Mr. Britten (Rep., Ill.). Referred to the Committee on Coinage, Weights and Measures. It provides for the extension of the metric system of weights and measures.

H. R. 3240. Introduced by Mr. Vestal (Rep., Ind.). Referred to the Committee on Coinage, Weights and Measures. It proposes to regulate the use of weights and measures in trade and commerce. The Bureau of Standards would pass upon types of weights or measures.

Anti-Trust

S. 315. Introduced by Mr. Walsh (Dem., Mont.). Referred to the Committee on Judiciary. It seeks to prevent evasions of the anti-trust laws by providing that the ownership or control, by any person or corporation, of stock or other interests in more than one association or corporation engaged in commerce, which has been a member of a combination dissolved under the anti-trust law or which has acquired possession or control of any of the works or patents of such a combination or an element thereof, shall be prohibited. The law would be enforced by the Federal Trade Commission and its violation would subject the offender to a fine of $5,000 and imprisonment for 3 years.

Export Associations

S. 812. Introduced by Mr. Fletcher (Dem., Fla.). Referred to the Committee on Interstate Commerce. It amends the export trade act by providing as follows:

"An association shall be deemed to be engaged in export trade for the purposes of this act if it shall promote agreements among its members as to the prices and terms which shall govern the sale of their products to foreign customers, engage in trade promotion abroad, transmit to its members inquiries or orders received from foreign customers for the purchase of their products, agree as to terms of credit and as to the allowance or refusal of credit or of sales to foreign customers, and generally promote such agreements and understandings among its members as are necessary to protect them from hurtful combinations and practices of foreign competitors or customers."

Colorado River

S. 727. Introduced by Mr. Johnson (Rep., Calif.). Referred to the Committee on Public Lands. This bill proposes to develop the lower Colorado River basin, including electrical power, and provides for a reservoir near Boulder Canyon; a main canal and structures connecting Laguna Dam with the Imperial and Coachella Valleys in California and other canals for delivery of water to lands in Arizona, Nevada and California. Applications for generation of electrical power would be made to the Interior Department. Power privileges would be leased for 50 years. The bill carries an appropriation of $70,000,000.

H. R. 2903. Introduced by Mr. Swing (Rep., Calif.). Referred to the Committee on Irrigation. It provides for development of the lower Colorado River basin, under an appropriation of $70,000,000.

Trade Commission

H. R. 716. Introduced by Mr. Johnson (Rep., Wash.). Referred to the Committee on Interstate Commerce. This bill provides for the abolition of the Federal Trade Commission and the transfer of its duties to the Department of Commerce.

Trade Contracts

S. 1005. Introduced by Mr. Sterling (Rep., S. Dak.). Referred to the Committee on Judiciary. It proposes to make valid and enforceable written provisions of agreements for arbitration of disputes arising out of contracts, maritime transactions or commerce among the states or foreign nations.

H. R. 646 and 747. Introduced by Mr. Mills (Rep., N. Y.). Referred to the same committee of the House. These are similar to the foregoing.

H. J. Res. 3. Introduced by Mr. Britten (Rep., Ill.). Referred to the Committee on Judiciary. It proposes preparation of a system of government contract forms by a board of government officers.

Waterways

H. R. 484. Introduced by Mr. Dupre (Dem., La.). Referred to the Committee on Flood Control. It proposes to create a Waterways Commission and appropriates $250,000.

S. Con. Res. 2. Introduced by Mr. McCormick (Rep., Ill.). Referred to the Committee on Expenses. It proposes a committee of five senators and seven representatives to investigate a proposed 9-foot channel from the Great Lakes to the Gulf.

H. R. 504. Introduced by Mr. Kelly (Rep., Pa.). Referred to the Committee on Rivers and Harbors. It appropriates $45,000,000 for the construction of a waterway from the Ohio River to Lake Erie, from the junction of the Ohio and Allegheny Rivers, Pennsylvania, to the mouth of French Creek in Venango County, Pa., to Erie, Pa., to Erie harbor on Lake Erie.

S. 41. Introduced by Mr. Lodge (Rep., Mass.). Referred to the Committee on Commerce. It appropriates $11,550,000 for the purchase of the Cape Cod Canal.

OIL

Output Restriction

S. 872. Introduced by Mr. Spencer (Rep., Mo.). Referred to the Committee on Indian Affairs. This bill would authorize the Interior Department to reduce the area to be offered annually for lease, or to suspend offers of leases on the Osage Indian Reservation in Oklahoma for not exceeding two years because of over-production of oil or inadequate prices.

Arkansas Fields

H. R. 3253. Introduced by Mr. Oldfield (Dem., Ark.). Referred to the Committee on Mines and Mining. It proposes to appropriate $15,000 for investigations by the Bureau of Mines regarding the drilling and production of oil and natural gas in Arkansas with a view to prevention of waste and for the economic development of these resources.

H. R. 182. Introduced by Mr. Winter (Rep., Wyo.). Referred to the Com-

mittee on Public Lands. It provides that 20 percent of receipts from naval petroleum reserves shall be paid to the states in which they are located.

H. R. 591. Introduced by Mr. Winter (Rep., Wyo.). Referred to the Committee on Public Lands. It provides for disposition of receipts under the leasing law, stipulating that 10 percent shall be for the government; that for past production 70 percent and for future production 52½ percent to the reclamation fund; and for past production 20 percent and for future production 37½ percent to the states.

Lease Inquiry

S. Res. 11. Introduced by Mr. Walsh (Dem., Mont.). Referred to the Committee on Public Lands. It provides for an investigation by the committee of all leases under the leasing law, based on the charge that individuals or organizations have obtained more than 3 leases in each state and more than 1 within the geologic structure of an oil or gas district.

Foreign Holdings

S. 424. Introduced by Mr. McKellar (Dem., Tenn.). Referred to the Committee on Foreign Relations. This bill would forbid the holding of interests in oil or oil shale lands or products by foreign governments or their citizens in cases where such governments prohibit equal enjoyment of like privileges by the United States or its citizens. The bill calls for a report by the Shipping Board by next July as to the discrimination of foreign countries in oil holdings by citizens of the United States.

TARIFF

Increased Duty

S. 482. Introduced by Mr. Jones (Rep., Wash.). Referred to the Committee on Finance. It would impose an additional duty of 5 percent on imports in other than American vessels.

Raw Materials

S. 347. Introduced by Mr. Jones (Dem., N. Mex.). Referred to the Committee on Finance. It provides for investigation by the Tariff Commission of the relations between duties on raw materials and finished products and competition of foreign industries with those of the United States. It appropriates $1,000,000.

Calcium Arsenate

H. J. Res. 38. Introduced by Mr. Brand (Dem., Ga.). Referred to the Committee on Agriculture. It appropriates $10,000,000 for the purchase and sale by the government of nitrate of soda and calcium arsenate for agricultural purposes.

Bills placing calcium arsenate, all kinds of arsenate, or ammonium sulphate were introduced as follows and referred to the Senate Finance Committee or House Ways and Means Committee: S. 159, by Mr. Harris (Dem., Ga.); S. 590, by Mr. George (Dem., Ga.); H. R. 629, by Mr. Black (Dem., Tex.); H. R. 611, by Mr. Wilson (Dem., La.); H. R. 464, by Mr. Clark (Dem., Fla.); H. R. 583, by Mr. Vinson (Dem., Ga.); H. R. 476, by Mr. Crisp (Dem., Ga.); H. R. 2866, by Mr. Stevenson (Dem., S. C.); H. R. 432, by Mr. Almon (Dem., Ala.).

MUSCLE SHOALS

S. J. Res. 12. Introduced by Mr. McKellar (Dem., Tenn.). Referred to the Committee on Agriculture. It proposes to accept the offer of Henry Ford to lease Muscle Shoals. A number of other bills of like purpose were also introduced.

RESOURCES IN WAR

H. J. Res. 85. Introduced by Mr. Evans (Dem., Mont.). Referred to the Committee on Judiciary. It proposes that in war property of all citizens shall be subject to conscription.

H. J. Res. 76. Introduced by Mr. Johnson (Rep., S. Dak.). Referred to the Committee on Judiciary. It proposes that in war Congress shall provide for conscription of every citizen and of all money, industry and property and shall limit profits for the use of such moneys, industry and property.

H. R. 194. Introduced by Mr. French (Rep., Idaho). Referred to the Committee on Military Affairs. It would authorize that in a national emergency the President could draft into service the material resources of the country of persons, corporations, or industrial organizations; and the stabilization of prices of commodities.

H. Con. Res. 1. Introduced by Mr. Ramsyer (Rep., Iowa). Referred to the Committee on Rules. It proposes the creation of a joint commission on national defense, of five senators and five representatives to report in December, 1924, a plan for drafting all resources of the country in case of war, subjecting every plant, agency and facility to universal service, and forbidding profit for individuals or corporations.

INDUSTRIAL DISPUTES

S. 289. Introduced by Mr. Spencer (Rep., Mo.). Referred to the Committee on Judiciary. It proposes the establishment of a Federal Court of Conciliation, of three judges appointed by the President, to determine disputes affecting interstate commerce.

H. R. 3208. Introduced by Mr. Thomas (Dem., Ky.). Referred to the Committee on Judiciary. It proposes to exempt combinations of labor from restraining orders or injunctions.

S. 983. Introduced by Mr. Sterling (Rep., S. Dak.). Referred to the Committee on Judiciary. It proposes to prohibit and punish seditious acts against the government by making it unlawful for any person to advocate the overthrow of the government.

H. R. 520. Introduced by Mr. Madden (Rep., Ill.). (By request.) Referred to the Committee on Interstate Commerce. It seeks to prevent the restriction, limitation or interference with the right of any railroad to employ any person.

Bills to abolish the Railroad Labor Board were introduced and referred to the Committee on Interstate Commerce as follows: H. R. 30, by Mr. Foster (Rep., Ohio); H. R. 89, by Mr. MacGregor (Rep., N. Y.); H. R. 171, by Mr. Tincher (Rep., Kans.); S. 920, by Mr. King (Dem., Utah). The last two confer upon the Interstate Commerce Commission authority to settle railroad labor disputes.

RAILROAD REGULATION

H. R. 2698. Introduced by Mr. Graham (Rep., Ill.). Referred to the Committee on Interstate Commerce. It proposes to repeal section 15a of the interstate commerce act, known as the guaranty clause.

S. 90. Introduced by Mr. Capper (Rep., Kans.). Referred to the Committee on Interstate Commerce. To repeal paragraphs 4, 5, 6 and 8 of section 407 of the transportation act.

S. 745. Introduced by Mr. Brookhart (Rep., Iowa). Referred to the Committee on Interstate Commerce. It proposes to abolish the Railroad Labor Board and to recreate the U. S. Board of Mediation and Conciliation to handle railroad labor disputes. It also proposes to confer upon the states power to regulate intrastate rates, and to repeal Section 15a, known as the guaranty clause.

H. R. 2699 and H. R. 2700. Introduced by Mr. McLaughlin (Rep., Neb.). Referred to the Committee on Interstate Commerce. They provide for repeal of the interstate commerce and transportation acts.

H. R. 719. Introduced by Mr. Brand (Dem., Ga.). Referred to the Committee on Interstate Commerce. This would repeal laws which deprive the states of the right to fix intrastate railroad rates.

H. R. 79. Introduced by Mr. McClintic (Dem., Okla.). Referred to the Committee on Interstate Commerce. It restores to the states jurisdiction over intrastate railroad rates.

H. R. 688 and H. R. 689. Introduced by Mr. Hawes (Dem., Mo.). Referred to the Committee on Interstate Commerce. They provide for seven regional branches of the Interstate Commerce Commission.

IMMIGRATION

H. R. 101. Introduced by Mr. Johnson (Rep., Wash.). Referred to the

(Continued on page 46)

THE TARIFF RELATIONS OF AMERICA AND EUROPE

Misleading Statements Create Wrong Impression Concerning Fordney-McCumber Measure—Observations on the Economic Status of Germany

By A. CRESSY MORRISON
Union Carbide Company

LAST year there was passed in Washington one of the most difficult legislative acts that has confronted Congress in many a day—the Fordney-McCumber tariff bill.

The bill was finally passed. It was passed in spite of the vituperation of all the importers and those who had international interests. It passed because there was a demand from the farms and mines and the few manufacturers who realized the necessity of such legislation if they were to survive. But since the previous tariff bills were passed, especially the Payne-Aldrich bill, nearly 12 years ago, we had passed through war.

The Fordney-McCumber bill was well conceived, was well worked out and is a good tariff law. The forebodings which were so often expressed regarding it have not materialized. The law is bringing in twice as much revenue as its predecessor. It has not stopped imports; they have increased heavily. International trade has increased under it. We therefore have a fact—a tried tariff law that is bearing up under the test—with which to deal. The country has had a business certainty on which it could depend for a time. Industry has gone forward with courage, labor is employed and we are in the midst of what may be called, when we compare it to all the rest of the world, a remarkable prosperity.

That leads us, naturally, to the present situation in Europe and how it affects us.

In June of 1923 I was in Norway. There I found a serious industrial depression. I saw a great power house that could produce over 100,000 horsepower and found all the industries dependent upon it idle—not a wheel turning. That is typical. There are many other similar cases in Norway. In spite of all the economic advantages of cheap power and overseas transportation, these great industries on which Norway was counting for her continued prosperity are idle. The plants are perfect and modern. Why are they idle? Because during the war in all parts of Central Europe competing plants, manufacturing the same product, were built up, and because the countries of Central Europe are manufacturing at home and not sending gold or real money abroad for anything unless they have to.

In Sweden I found practically the same conditions. In both countries men were being put to work on the roads at $1.25 a day, and they were glad to get that work. So many men are leaving Norway and Sweden because of lack of work and other considerations, as well as higher wages in the United States and elsewhere, that questions have arisen of recolonizing certain districts that had been inhabited for several hundred years but which are now practically deserted. These difficulties are due to the breaking up of international trade and the competition of manufacturing units in other countries supplying the home demand and to the currency situation.

A. CRESSY MORRISON

In Denmark I found that there had been an enormous failure which had cost Denmark about $100,000,000. Denmark had prospered during the war, and then when the industries came to write down the inventories the banks couldn't collect and failure and depression followed.

In France and Belgium I found people working. There was no serious distress. Of course, in the devastated districts the situation is still bad, but an enormous amount of reconstruction is going on and men are being put to work at that. It is curious to think that in Belgium and France men are working, while in the northern countries they are not. The cause, as I see it, is that the purchasing power of the franc in France and Belgium has not fallen in accordance with its lower gold value throughout the world. The result is that when labor is paid a franc, worth 6 cents, 10 cents' worth of work is obtained, and that difference is enough to give these countries their home market and good business in competition with the world.

The franc has a purchasing power at home that is much higher than its visible purchasing power in the world market. So that manufacturers there who employ labor are buying their labor, and if it is French material they are buying the French material in a market where the franc has a high purchasing power and selling it in a world market for gold. Therefore they have a competitive ability that America must think about.

In England I found a great deal of unemployment. They take taxation seriously there. A man on a modest income has to pay 34 percent tax on an income, for example, of $4,000 and $5,000 a year, and it is collected. England is trying to pay her bills. England is doing everything that is possible to bolster up her industries, but she is being invaded by competition she cannot meet. The Nottingham lace manufacturers complain that laces are coming in so fast they have to let their men go. The iron and steel people are being affected. The cutlery people are being affected. England is no longer making shears except in a modest quantity. She is importing them from Germany. The workmen in England are idle because of two things—first, because England is in a position where, with her present wage scale which is higher than the rest of Europe, she can hardly compete for foreign trade as heretofore; and, second, because in many lines cannot compete at home with German, French and Belgian products.

Just as soon as present disorder in Germany is settled and she gets firmly upon the track of commercial conquest which she is definitely and positively laying for herself, Germany will set forth to win the trade of the world. England, with all her commercial connections, will be in an extremely hazardous position. The British nation now realizes the danger and an educational campaign is on to at least hold the English home market for Englishmen by means of a tariff. When England needs protection against Europe it requires but a moment of reasoning to understand America's necessities.

I think you will be interested to know something about the conditions in Ger-

many and in the Ruhr. I want to say that in traveling through Germany we received nothing but courtesy. There was a sort of tacit understanding, I think, that Americans, Japanese and English would be well treated in Germany. At least we were the recipients of such treatment, and the Japanese I met—and I met several—said they were receiving the same courtesy, which I understand is extended to the English. I complied with the laws. I went to the police and reported when I arrived and I went to the police when I departed. I went through the French, Belgian and English lines in the Ruhr and received courteous treatment everywhere.

Germany, including the Ruhr, is cultivated up to the final inch; every farm and field is producing wonderfully. I asked a German manufacturer, "How about the farmers, are they suffering?" "Oh," he said, "No, they are not suffering at all." I said, "There is a tremendous lot of prosperity apparent, every field is cultivated; crops are good." He said, "Yes." I said, "You are a manufacturer—how about you?" He said, "We have been able to fall upon our feet." I said, "How about the working man?" He said, "There is no serious trouble; of course, they are always wanting more wages and we give it to them and pay them in marks and that is all right." I said, "Who is suffering?" Then he told me it was the middle class who had endowment insurance or insurance policies; the widow who was left with a comfortable sum in marks and had it in the savings bank; the real estate owner who has been prohibited by the German government from raising his rent in marks so that he may be receiving today less than a dollar a month for a five room flat although that rent practically is nothing. A guide offered to take me around for twenty-five cents a day American money and I agreed to it and I paid him twenty-five cents "American" and asked him if he was satisfied and he said, "Yes, thank you," and then I made him a present of a fortune. In those days the marks were very valuable, very valuable. I gave him two hundred thousand marks. I asked him how much rent he paid and how many rooms he had. He said, "I have two rooms, a lease for eighteen months and I pay ten thousand marks a month." Six cents.

These conditions in Germany may be abnormal but they have been going on a long time, and because of these facts the manufacturers of Germany have been doing this: They have been turning a depreciating mark into gold by taking German energy, paying for it in paper and letting that energy build additions to their plants, making machinery which in Germany can be carried from the pig iron through to the finished product on the mark basis and installing it.

For my trip to Berlin, which was a five-hour trip from my starting point, quite as far in time, at least, as from Washington to New York, I was charged twenty-three cents. One might easily say the railroad has lost money and the government has suffered. But all along the railroad were new tracks and sidings, new buildings going up, new stations, and new improvements. The rails and roadbed were in good condition, things were being brought up to a high standard. The government did not care how low the fare was, it kept the people contented. It cost less to print a million marks than it did to collect the twenty-three cents that was obtained from me, and if the printing press is running and the working men will take paper, can't you turn that paper into material things like bricks, mortar, machinery and industrial equipment and have it standing there ready for the time that Germany can go out again for world trade? Plants built with paper marks and standing there at a gold value for world trade.

While I was in Germany, there was a threatened strike of two hundred and fifty thousand men. They said that the mark never quite came back to a gold wage value because they made their agreement at the beginning of the week and at the end of the week the mark had depreciated. Therefore, they insisted on a sliding scale and that the wages be raised to one-half the pre-war standard. That was all they asked, one-half pre-war wages.

These men are manufacturing against American manufacturers. These men will take the pig iron and carry it through to the pair of scissors, the wrench, the knife, the file. The more labor required in the manufacture the greater advantage they have over us. The finer the finished product the more the labor, and the harder it is for us with our labor cost to meet it in competition. These are the men who are preparing for a world invasion and we are the best market in the world.

We hear that Germany is in distress. I took pains to look for this distress. I went to the pleasure resorts. I went to the theatres. I went to the beer gardens. I went to the different places out of Berlin where the people congregate on Sunday. There was no more prosperous crowd to be found anywhere in the world. There was no evidence of suffering. Then I went into the slums and looked for the gaunt cheeks of little children and did not find them. I looked at the shoes, a pretty good indication. The children were wearing shoes, not paper shoes, but leather shoes.

I heard nothing in Germany indicating a desire on its part to pay its reparations. I could not find anything like repentance. I do not think they have any comprehension of guilt. I do not think anybody with whom one ordinarily comes in contact feels there is an obligation. One manufacturer said, "Of course I am sending my money abroad. I send it to my agents in various countries. I send my goods over, I collect costs for Germany and leave my profits over there. Should I bring my money back to give to my government and say, "Please hand it to the French"? Not I.

Had there not been a war, Germany would have been in such a strong competitive position throughout the world today that we as manufacturers would certainly not be able to export manufactured goods to the world markets against her. She is just as determined today as she ever was and is in a better position because of all of these financial manipulations. I believe that soon we are going to have the most serious competition that the United States has ever faced.

In Germany I talked to a man who was an official observer, and he said, "After my observation, I am convinced that no ad valorem tariff which the American people could be induced to put

During the work in behalf of the Fordney-McCumber tariff bill the mining industry received every cooperation from certain industries with which it is closely associated along economic lines. One of the most helpful individuals in this cooperation was A. Cressy Morrison, of the Union Carbide Company. The accompanying series of impressions, as a result of an extended tour of European industries which Mr. Morrison made last summer, is of great interest because of the informal and intimate pictures presented of those industries. The mining industry is concerned in this problem because it is to these industries in the United States that the mining industry must sell its products.

The American Mining Congress.

upon foreign products will keep German manufacturers from sending their goods into the United States."

Now, that being so, we should awake to our responsibilities. Our responsibilities are not to ourselves alone; they are to the United States of America first and to those employed, second. We must as citizens do our duty and take care of those who are aiding in building up our own prosperity and these are the men in our plants. Wages here are many times what they are in European countries—and there are none in our country who desire to have them lowered to European standards.

If we cannot keep for our people the present comforts, we are not going to have any country. The standard of living cannot be brought down in the United States and still have any United States.

False propaganda being issued against the tariff is of vital interest, and I feel that this question of tariff must be understood and conclusions acted upon with vigor. There is a most determined agitation against the tariff today. Recently I read a newspaper article showing a certain organization, the history of which I need not go into (but one which I know is supported by the importers of this country and by internationalists), that is now sending to every farmer in the country garbled statements alleged to show what the tariff is costing them. One article refers to Kansas, for instance, saying the tariff has cost the farmer in Kansas, according to this malicious misrepresentation, two hundred million dollars in the last year. Now, those statements are bound to have their effect and lead to misconceptions of what a tariff is and why it exists and what it does. Such propaganda must be counteracted and answered.

We should educate our working men and all our customers to the fact that the prosperity of the United States as a whole is the best thing for the people as a whole, and that no section and no part of our United States can go down because of foreign competition, without its bringing down all the others.

This is the only country in the world where there is a universal language, where the diversifications from north to south and east to west industrially cover every possible phase of production and manufacturing. Our climate gives us such a wide range of crops. We are more self-contained than any other country. The home market of the United States is our market, not the market of others. The balance of trade in the last few months has gone against us. That is a very unusual experience.

It was said we must buy and buy and buy from Europe in order that Europe may buy and buy and buy from us. Europe isn't buying from us because she has become pretty nearly self-contained.

All over France, all over Germany, everywhere, cultivation will be found carried to the highest extreme. Europe does not buy these commodities from us because she is growing or making them herself. Do you suppose Germany is buying Chilean nitrate? She used to buy vast quantities of this fertilizer and was the greatest customer Chile ever had. She does not buy any now. She is using her hydro-electric power to manufacture her requirements within her own borders and the importation is practically prohibited. That is the reason Norway is practically idle. They have no use for their hydro-electric powers now developed in other countries. Germany is becoming more self-contained and so is all Europe. If we try to buy more than we sell in Europe and thus fill up the gaping sink hole of European finances, we are going down ourselves.

I sincerely trust that when this tariff question is being discussed in the next campaign it will be given the serious thought which it deserves, realizing how vital it is to American manufacturers and workmen, and that everything possible will be done to maintain the present existing law without change. We cannot go through two years of agitation on the tariff now knowing where we stand, without an industrial crash.

This, then, is our duty. We must awake, and arise to our responsibilities.

MINE INVESTIGATION FUNDS

INCREASED appropriations for the Bureau of Mines and Geological Survey for the year beginning July 1 next have been recommended to Congress by the Budget Bureau. The largest increase is $118,305 for investigations as to oil, oil shale and gas, a total of $523,305 being recommended for this purpose. For investigating mine accidents $359,768 is provided, a decrease of $33,232. For mine rescue cars and stations the budget calls for $262,300, an increase of $41,300. A request for a new mine rescue car costing $40,000 is made. For testing fuel an appropriation of $138,280 is recommended. The mineral mining investigation fund is fixed at $113,360, a decrease of $11,000. To enforce the mineral leasing law $91,360 is requested which is an increase of $11,000. For the work of mining experiments stations $200,000 is requested, which is an increase of $25,000, while for mining investigations in Alaska $35,000 is asked. Total requests for the bureau are $1,909,573, as compared to $1,794,560 during the current year.

The Geological Survey is provided with $300,000 for examination and classification of land, an increase of $20,000. For geologic surveys an appropriation of $333,722 is requested, which is an increase of $33,000. For reports on mineral resources $136,734 is requested, an increase of $12,000. For investigation of mineral resources in Alaska $78,000 is provided. The total fund for the Survey is $1,805,272, as contrasted with $1,782,480 this year.

Among appropriations requested for the Bureau of Standards are: $15,000 for investigation of mine scales, $44,000 for metallurgical research, and $8,000 for investigation of rope used in mines, etc.

Provision is made for mints and assay offices at Carson, Nev.; Denver, New Orleans, Philadelphia, San Francisco, Boise, Deadwood, Helena, New York, Salt Lake, and Seattle.

The General Land Office is given $700,000 for surveying public lands.

STANDARDS FOR COMPRESSED AIR

A PAMPHLET entitled "Trade Standards Adopted by the Compressed Air Society," has just been published, embodying the result of extended study and research on the part of the executives and engineers associated with the members of that organization. It embraces the nomenclature and terminology relating to air compressors and their operations; a history of the development of speeds of air compressors; an explanation of capacities and pressures; instructions for the installation and care of air compressors with illustrations of devices suggested for cleaning the intake air; recommendation for the lubrication of air compressing machines and the cleaning of air receiver piping; a description of the low pressure nozzle test recommended by the society, and a partial list of applications of compressed air.

Copies may be had from the members or by addressing the Secretary of the Society, C. H. Rohrbach, 50 Church St., New York.

PERSIAN OIL

The Persian Legation denies a report that its government has granted exclusive right to the Anglo-Persian Oil Co. to exploit one of the five northern Persian provinces. Concession has been given to the Sinclair oil interests for four of the five provinces and the fifth has been reserved for Persian interests, in accordance with the policy to remove the influence of the Anglo-Russian monopoly.

TARIFF ASSOCIATION MEETS

Southern Tariff Congress at Chattanooga Shows Growing Strength of Sentiment in the South Favoring Tariff—Present Tariff Schedules Increase Value of Southern Minerals

BENEFICIAL effects to the whole South under the Fordney-McCumber tariff act were pointed out at the annual meeting of the Southern Tariff Association held in Chattanooga, December 7 and 8.

President J. H. Kirby presided over the meeting.

He told how the removal of tariff in 1920 had opened the gates of this country to the soya bean and other oil sources from the orient and made a crop of peanuts which would have been worth $100,000,000 in 1919, not worth the cost of their seed.

"The tariff is merely a levy. It is a law of the country imposed upon products imported. This question is greatly misunderstood in every walk of life; most abused in the industrial world and among the rank and file. After the levy is paid in to the treasurer it is used for the purpose of reducing taxes, paying the national debt, and lightening our burdens. Of goods coming into this country more than 60 percent is on the free list. The rest pays taxes, and is used in paying the expenses that your taxes would otherwise pay.

"The boll weevil and the tariff trouble—these were the two important factors when this association was organized."

Mr. Kirby then told how the Southern Tariff association had secured a schedule which was at least not ruinous to the farmer, and said that importers were now "after" that same schedule and that success for them would spell ruin for the southern farmer.

"We have the levy, and, while it is not all we would like, to many it is the difference between breaking even and loss," said President Kirby.

G. T. McElderry, of Alabama, told how the low tariff in 1920 had almost ruined the Alabama farmer. "It is a mistake to let the American compete with the cheap coolie labor of the orient," he said, "The farmer has never had a square deal, and if he does not get it now, so much the worse for the democratic party."

He was followed by Ed Woodall, of Texas, a member of the Cotton Crushers' association of that state, who told how the manufacturers would rather patronize American farmers, but warned them that, under the principles of good business, the manufacturers could not be expected to pay prices higher than necessary, in event foreign oils were admitted at a tariff schedule which would make them cheaper than American oils.

"There has never been a time in the history of this country when the farmer needed aid so urgently, and this great organization, the Southern Tariff association, came just in the nick of time," said J. J. Brown, commissioner of agriculture of Georgia, in opening the meeting. "Agriculture has been so below the cost of production that young children have had to be taken from schools and put back in the fields to make a living.

"Young men prepared for scientific farming have gone back home and, after looking the fields over and trying to make an honest living, given up in despair. They are leaving the farm and selling their brains to concerns able to pay for operation by reason of the protection from unjust discrimination which they enjoy. I hope the south and west will lay aside politics to fight until the right sort of tariff measures be obtained, whether for revenues or protection. I believe a different tariff will turn the faces of those bright boys home again."

The value of the tariff to the mineral industry of the south was pointed out by Herbert Wilson Smith, chief of the tariff division of the American Mining Congress, who said in part as follows:

"The annual increased value of southern minerals as a result of the schedules in the present tariff law is more than $50,000,000.

"In addition to this increase, there are innumerable mines which were lying idle before the passage of this measure that have resumed operations under the protection given them.

"The beneficial effect of tariff on the mining industry has been so evident during the year the bill has been in effect that other industries which opposed some of the proposed tariffs on minerals have realized that their prosperity is more tied up with the prosperity of the mining industry than they had ever considered possible.

"At the Chattanooga meeting of the Southern Tariff association ample warning is being given that there is every probability of an attack on these schedules during the coming session of congress. This suggestion of a probable downward revision of tariff meets with cold response in this southern district, where in former years it would have been received with loud acclaim.

"This change in sentiment is due to the fact that you cannot convince a producer of manganese, or of quicksilver, kaolin marble, feldspar, fluorspar, or of lead or of zinc, or of any of these metals and minerals on which the industrial life of the south depends so largely, that a tariff which has restored idle mines to operation and has kept the domestic market for the domestic producer and kept for the miners of the United States many millions of dollars annually, has not been of value to him.

"The southern producer of raw materials has had one year of first-hand experience with tariff protection and he wants it permanently. The slogan is not going to be to take tariff out of politics, but 'take free trade out of politics' and sink it to the bottomest limbo of mistaken and forgotten issues."

In closing, Mr. Smith pledged full support to the Southern Tariff association.

Hon. Frank W. Mondell, member of the War Finance Corporation and floor leader of the House during the consideration of the Fordney-McCumber tariff legislation, addressed the Congress at its evening session on the most interesting subject, "The effect of tariff levies upon the loan value of farm products." Mr. Mondell stated that there has never been any considerable period in our history when any major party has lacked at least a minority favorable to the protective policy, or leaders courageous in its defense. The protective policy is an American policy. The first legislative act of the American Congress under the Constitution was a protective tariff act signed by the "Father of his Country," with the approval of his Cabinet, including Thomas Jefferson, Secretary of State, and Alexander Hamilton, Secretary of the Treasury. Mr. Mondell stated further:

"Important and essential as are the great markets, built and sustained under a protective policy, to the agricultural producer, equally or perhaps more important, at any rate more clearly, more easily demonstrated, are the direct and unquestioned benefits which the agricultural producer obtains through the laying of duties which protect his product from unfair foreign competition.

"It is scarcely necessary in this presence to call attention to the benefits, direct and unquestioned, which have come to the agricultural producer through the duty on sugar, on rice and on vegetable oils. Even the humble, though toothsome, peanut has been elevated to an honorable and remunerative position in the nut aristocracy through the beneficial effects of a protective tariff. The

duty on wool and mohair has been the salvation of the flock masters of the nation; and but for the duty on citrous fruits the orchardists of Florida and California would be facing bankruptcy. Trying as has been the situation of the wheat farmer of the northwest, he has secured a price for his wheat in excess of that received by his Canadian neighbor in a sum approximately equal to the duty rate of thirty cents a bushel.

"This larger and more generous recognition of agriculture came, not by reason of any change of view or opinion on the part of those who have constantly and consistently stood for a protective policy, but rather by reason of the fact that the agricultural producers in various lines have at last come to realize the importance and necessity of a sufficient duty on their products.

"We shall, in my opinion, find it necessary, as time goes on, to enlarge and extend rather than limit and diminish the scope of our agricultural schedules.

"This steadying and sustaining effect has perhaps been most apparent, insofar as loans through the War Finance Corporation are concerned, in the case of such articles as livestock, wheat, rice, wool and peanuts, but it applied to all classes of agricultural products on the importation of which a duty is laid.

The meeting was attended by representatives of southern producers' organizations, secretaries of chambers of commerce, southern bankers' associations, and others important in southern industrial life.

Hon. John H. Kirby was elected president and J. A. Arnold vice president for the ensuing year.

CALL FOR THE ELEVENTH ANNUAL MEETING OF THE COLORADO METAL MINING ASSOCIATION

BY authority of the Executive Committee, notice is hereby given that the Eleventh Annual Meeting of the Colorado Metal Mining Association will be held, in joint session with the Colorado Chapter of the American Mining Congress, in Denver, January 22 and 23, 1924, convening Tuesday morning, January 22, at 10 A. M., in the Magnolia Room of the Albany Hotel. The purpose of the convention is to consider the various problems affecting the metal mining industry; to select a Director for the State Association from each metal mining county, and to transact such other business as may in the opinion of the members be helpful in the upbuilding of the metal mining industry.

To consider problems confronting the various mining districts; to unite on measures of relief and to take such other action as may seem expedient or desirable, it is urged that every metal mining county in the state send a strong delegation to participate in the deliberations, and help formulate and adopt concrete plans for cooperative effort during the coming year.

As provided in the by-laws, "Each metalliferous mining county in the state shall be entitled to five delegates with one vote each in the annual meeting, and five alternates; provided that any county may elect ten delegates with one-half vote each and ten alternates; and provided further, that if less than five delegates attend from any county, those attending shall have the right to vote proxies of absent delegates, but not to exceed a total vote of five from any one county.

"The State Commissioner of Mines, the Secretary of the State Bureau of Mines, the President of the State School of Mines, the State Geologist, the chief representative of the United States Bureau of Mines and the chief representative of the United States Geological Survey shall be delegates at large, and entitled to one vote each."

Commercial organizations or like associations, in counties where there is no active mining association, are urgently requested to arrange that their county be represented at the State Convention. Delegates should be selected not later than January 15, 1924. Each county delegation should, if possible, organize before the convention and select its member of the resolutions committee, and a member to serve on the Board of Directors of the State Association, so that these nominations may be promptly certified to the Secretary of the Association. The secretary of the meeting called for the purpose of selecting delegates to the State Convention is requested to immediately mail the undersigned secretary at his office in Denver, a complete list of the delegates and alternates.

THE COLORADO METAL MINING ASSOCIATION
By Order of Executive Committee,
GEORGE A. STAHL, President.
Attest: M. B. TOMBLIN, Secretary.
State Capitol Building, Denver.

CALL FOR SIXTH ANNUAL MEETING, COLORADO CHAPTER AMERICAN MINING CONGRESS

NOTICE is hereby given that the Sixth Annual Meeting of the Colorado Chapter of The American Mining Congress will convene in joint session with the Colorado Metal Mining Association, in the Magnolia Room of the Albany Hotel in Denver, January 22 and 23, 1924, for the purpose of considering problems affecting the mining industry, the election of eight directors, and to consider such other business as may come before the meeting. The meeting for the election of directors and officers will take place in the Magnolia Room of the Albany Hotel at 9:30 A. M., Wednesday, January 23. All members of the Colorado Chapter are urged to be present at this time.

Problems vitally affecting the metal mining industry are constantly arising at Washington, and a strong national organization is imperative to protect the interests of those engaged in metal mining. In the American Mining Congress Colorado mining men have a powerful representative at the national capitol.

To consider problems of national import affecting the metal mining industry and to take such steps concerning these questions as may seem advisable, the Colorado Chapter of the American Mining Congress extends a cordial invitation to the mining men of the state to participate in their meeting.

GEORGE E. COLLINS, Governor.

Attest: M. B. TOMBLIN, Secretary.

Room 12, Capitol Bldg., Denver, Colo.

REDRAFT OF REVENUE ACT SUBMITTED TO CONGRESS

Reorganization of Mining Companies Affected—Deduction for Discovery Depletion Limited to 50 Percent

A COMPLETE redraft of the Revenue Act which embodies in detail the recommendations for tax revision and for the simplification and clarification of the administrative provisions of the revenue law made by Secretary of the Treasury, Andrew W. Mellon, has been prepared by the Treasury Department and is now before the Ways and Means Committee of the House of Representatives for consideration.

In a letter to Congressman William R. Green, Acting Chairman of the Committee on Ways and Means, Secretary Mellon states that the comprehensive program of tax reduction recommended by him appears to have met with a most favorable public reception. With the proposed new Revenue Act before it, the Committee has already undertaken the task of getting a bill in shape to present to Congress at an early date.

Few of the proposed changes have a specific relation to the provisions of the present law relating to the mining industry. A provision has been inserted to prevent taxpayers from increasing the bases for depreciation and depletion in connection with a reorganization, and another limits the deduction for discovery depletion to 50 per cent. of the net income from the property depleted, instead of the present limitation of this deduction to 100 per cent.

Provision is made for a board of tax appeals which will sit locally in the various judicial circuits throughout the country. It is stated that this board will be independent of the Commissioner of Internal Revenue and that the practice before it will be similar to that before the Interstate Commerce Commission. In case of a hearing in the courts involving a decision of the board, it is provided that findings of the board shall be taken as *prima facie* evidence of the facts contained therein.

The following summary of the substantial changes in the Treasury draft of the new revenue act from the present law is quoted from the letter:

"1. Earned income, defined as wages, salaries, and professional fees, is given a credit of 25 per cent. of the amount of the tax attributable to the earned income.

"2. The normal tax on the first $4,000 of net income is fixed at 3 per cent., and upon the remainder of the net income at 6 per cent.

"3. The surtax rates begin at 1 per cent. on net income from $10,000 to $12,000; an additional 1 per cent. for each $2,000 of net income up to $36,000; then 1 per cent additional for the next $4,000 of net income up to $40,000 and then 1 per cent. additional for each $6,000 of net income up to a total of 25 per cent. at $100,000 and over.

"4. Capital assets are defined as property held by the taxpayer for profit or investment for more than two years. Upon the sale of capital assets the tax

HON. WILLIAM R. GREEN

on the gain from the sale is limited to 12½ per cent. of the gain, and the amount by which the tax is reduced on account of such a loss is limited to 12½ per cent of the loss.

"5. The taxpayer is permitted to take as a deduction from his gross income in determining his taxable income interest on indebtedness and losses of a non-business character only to the extent that the sum of these two items exceeds his wholly tax-exempt interest.

"6. In community property states where the husband and wife have a joint interest in certain property of either acquired after marriage, the income from this property is taxed to the spouse having control of the property.

"7. The principle contained in the 1918 Revenue Act that liquidating dividends constitute a sale of the stock instead of a distribution of earnings has been restored. This puts liquidating dividends within the capital gain section of the Act and recognizes the real effect of such dividends.

"8. The section with reference to the reorganization of corporations has been rewritten to eliminate existing uncertainties in the present Act and to include other usual forms of corporate reorganization in aid of business, such as the splitting of one corporation into two or more corporations.

"9. Provisions have been inserted to prevent the use of this Reorganization Section to escape proper taxation by increasing the basis for depreciation or depletion, or by increasing the basis of gain or loss from the sale of assets transferred in connection with a reorganization, or by distributing as capital gain what are in effect dividends out of earnings.

"10. The deduction for discovery depletion is limited to 50 per cent. of the net income from the property depleted.

"11. In the case of a trust where the trustee has the discretion to distribute or not, the income is taxed to the beneficiary if distributed and to the trustee if not distributed.

"12. Where the grantor of a trust reserves the right to change the trust in favor of himself, the income of the trust is taxed to the grantor.

"13. The penalty under Section 220 which seeks to penalize corporate forms used to avoid imposition of surtaxes on the stockholders, is now based on all the income of the corporation which would be taxed in the hands of an individual.

"14. The application of the present law requiring an income for a fractional part of a year to be placed on an annual basis is restricted to cases where a return is made for a part of a year as the result of the voluntary act of the taxpayer in making a change in his taxable year.

"15. A board of tax appeals is created to hear all appeals from the assessment of additional income and estate taxes, which will sit locally in the various judicial circuits throughout the country. The cases of both the Government and the taxpayer are presented before the board which acts impartially and the practice there is similar to that before the Interstate Commerce Commission. Upon a decision in favor of the government, the additional tax can be assessed by the Commissioner of Internal Revenue and the taxpayer is left to his remedy in the courts for a recovery of the tax. If the decision is in favor of the taxpayer, the Commissioner may not assess the tax but is left to his remedy in the courts in a suit to collect the additional tax. In a hearing in the courts, the findings of the board shall be taken as

prima facie evidence of the facts contained therein.

"16. The administrative sections of the Act have been rewritten with a view to clarifying their provisions, making the statutes of limitations consistent, relieving the necessity for protest on the payment of taxes, and lightening the penalties for minor failures to comply with the Act.

"17. The tax on telegrams, telephones, leased wires and radio is repealed.

"18. The tax on admissions is repealed."

WEALTH, PUBLIC DEBT AND TAXATION*

THE Bureau of the Census compiles decennially statistics showing the wealth of the nation as indicated by the estimated value of real and personal property; also the total revenue, public debt, assessed valuation of real and personal property, tax levies, and tax rate.

"The statistics for taxes and other specified revenues cover every political civil division having the power to collect revenues, including the federal government, states, counties, cities of all sizes, townships, school districts, and drainage districts, etc., whereas the prior report was limited to the federal, state, and county governments, and the governments of incorporated places with a population of 2,500 and over. The report will also contain complete statistics for the public debt for all subdivisions having the power to incur debt. In addition, it will show the assessed valuation of real estate, the amount of tax levies, and the tax rates.

"In order to secure this information it was necessary to make inquiry, either by mail or by personal visit, of all the various political divisions, numbering about 60,000 in all. The plans for the collection of the statistics through the mail and by the agents in the field were made prior to January 1, 1923, and the enumeration was completed by June 30, 1923. Although this census is broader in scope than any heretofore made, the field work has been finished at a much earlier date and at a much less expenditure than at any preceding enumeration. The preliminary reports are now being issued, and it is expected by the close of this calendar year to have the result of the inquiry published. This will make the data public more than a year earlier than those for the last census, 1912, were published. This result has been attained by careful preparation, the extensive use of the mail, and a reorganization of the field force.

The reports for 1922 will cover the following subjects: Public debt (tax-exempt securities); assessed valuation and tax levies; specified revenues; digest of laws relating to taxation and revenues; estimated national wealth; and abstract of the five reports.

"The report on public debt will contain detailed statistics for the federal government, for all the states, counties, cities, and other minor civil divisions, so that the rate of increase and the amount of issue can be studied for the different sections of the country and the different classes of government.

Tax-Exempt Bonds

"While in some states a considerable proportion of this material was secured at the state capitol, in many instances it was necessary to go directly to the places, and the absence of complete records and the use of antiquated accounting systems have added materially to the cost of the work.

Digest of Tax Laws

"To insure a complete canvass it was necessary to make, in advance, a careful study and digest of the taxation and revenue laws of all the states. This digest will shortly be issued as one section of the report, and a considerable portion of the manuscript has already been sent to the printer. This will be the only up-to-date report covering the entire subject, and we expect it to satisfy the urgent demand for definite information concerning the tax legislation of the states and local governments.

National Wealth

"To complete the balance sheet of the nation, the bureau is preparing an estimate of the true value of all tangible property, real and personal, in continental United States, and, so far as possible, in the outlying possessions, including both taxed and exempt property held by governments and by private corporations, associations, partnerships, and individuals.

Exempt Property

"An estimate is being prepared of the value of all real property exempt from taxation. Primarily it consists of the value of real property and improvements thereon belonging to the federal government and states, counties, cities, towns, villages, school districts, other districts organized as public corporations, and certain properties held under private ownership. These properties, classified as to use, are devoted to educational, agricultural, religious, fraternal and benevolent, correctional, charitable, curative, protective, and defensive purposes, including also public utilities, general administration buildings, and such miscellaneous properties as cemeteries, fish hatcheries and game farms, Indian reservations, and in certain states reforested lands.

Financial Statistics

"The financial statistics of states and cities compiled annually include the total and per capita receipt from revenues; total and per capita payments for expenses, interest, and outlays; total and per capita indebtedness; estimated true value and assessed valuation of property; and taxes levied, rates, methods of assessment, and other financial matter. Descriptions of accounting terminology and suggestions for uniform classification are also included.

"These annual reports, which have been compiled by the Bureau of Census since 1902, constitute a valuable statistical history of the income, expenditures, methods of taxation, and practically all financial data of the states and cities, showing the changes that are taking place in the total and per capita transactions."

* From Report of the Secretary of Commerce.

MINING COURSE NOW OPEN

THE Winter Mining Session of the College of Mines, University of Washington, will be held for the 28th year at Seattle from January 4 to March 20, 1924. The courses are open without examination to anyone interested in mining. Expenses consist of the cost of materials actually used and a university fee of $20.

The studies are arranged in four groups: Quartz mining, placer mining, coal mining, and ceramics. In addition to the fundamental subjects such as geology, mineralogy, chemistry, and drawing, specialized training is given in ore mining methods, mine surveying, mining law, milling, including flotation, assaying; hydraulics, gold-dredging; coal analysis, coal washing; clay testing, manufacture of clay products and cement. The session has proved interesting in past years to many prospectors and mining men from Alaska, British Columbia, and the northwestern states. Details can be obtained by addressing the Dean, College of Mines, Seattle, Wash.

TAX PROCEEDINGS

The proceedings of the conference on mine taxation at the last convention of the American Mining Congress have been published as a separate volume of 172 pages, which may be obtained on request of the American Mining Congress at $1 per copy. It covers discussions at the convention on inventories, retrospective appraisals, depletion, discovery value, profit in mining ventures, reorganization of mining companies, and taxation of dividends and other corporate distributions.

THE COAL RESERVE AND TAXES

A Statement Showing What the Effect Will Be if Any—and Hence All—of the Reserve of Coal is Taxed To Pay the Current Expenses of Government. One Way of Simplifying the "Coal Problem"

By GEORGE H. CUSHING

PLEASE forgive the threadbare illustration, but—

At the end of the world war, it would have taxed the capacity of our most flexible computing machine to measure what the German people owed. Everybody was in debt to everybody else. Corporations were in debt to the people. The people were in debt to the corporations. The local and federal governments were in debt to the people. The Empire was in debt to the states. The whole people were in debt to the rest of the world—thanks to the work of the reparations commission. It seemed as though the German people were going to be employed "from now on" in doing nothing but paying off what they owed.

At the close of the world war, a German mark was still worth about twenty cents. Today, you can buy about a billion of them for a cent—or something like that. The mark is still the legal money of Germany. The debts of the German people were expressed in marks. The cheaper the marks became, the easier it was to pay, *in Germany*, the debts of the German people. As a matter of fact, about all of the internal debts of Germany have been paid. Nobody owes anybody anything. That leaves to be liquidated only the debts which are represented by the award of the Reparations Commission and the incidental borrowings from other countries—a total of about 32 billion dollars. By contrast, France owes 30 billion dollars; England owes 40 billion dollars and the United States owes 20 billion dollars. ***But the Germans have no internal or personal debts. All of the other peoples are loaded with personal and corporate debts.***

Germany's act of allowing the mark to depreciate has been cruel to the individual German but most kind to the German people—and especially those yet to come. It has been hard on German business for the minute, but, at the expense of a temporary discomfort, it has bought for German business a future advantage which the rest of the world will not appreciate fully until we are again in competition with Germany. When that time comes, we will all appreciate what it means for a debt-loaded corporation to try to compete with one which has no debts.

You may, if you want to, grab this little bone and run away with it and raise all sorts of trouble while you are running. You may say—and do harm by saying it—that, by implication, I am advocating the depreciation of the currency for the purpose of freeing the world of debt. Most forceful illustrations are capable of such wrong constructions. I am not advocating any easy way of paying debts. Instead, I am

DUE FOR SOME DESECRATION

using a current fact to illustrate the influence of debts for the purpose of preaching a little sermon against our reckless habit of creating debts.

That is, we want money with which to pay the current cost of running our governments. Our legislative bodies have a weakness for sentimental things. If somebody advocates something strongly and if he gives it a sentimental twist, the legislature is likely to buy it, no matter what it costs. The most expensive luxury in which the American people indulge is not automobiles but maudlin sentiment.

After we have spent the money, we proceed to try to collect it from the people. That is not easy to do. We have to comb the country for things to tax in order to bring in the money which will liquidate the cost of our sentiment. One of the first things thought about, on such occasions, is the coal in the ground.

A certain kind of sentiment attaches to that—an acrid sentiment, incidentally. Some of our saffron-hued journals write pieces directed at the heads of the tax assessors. They say that some of our coal land is being worked out every year. They say that the more of our reserve we exhaust the less we have left. And, the less we have left, the more valuable becomes that which is left. They say that coal in the ground, by merely lying undisturbed, becomes more and more valuable every day—that it is impressed by an "unearned increment." They say that the crowding of the people around a coal pile adds to the value of that pile. They say that this added value belongs to the people who created it by surrounding the pile and not to the man who owned the pile during the encircling process. They say that the people cannot, under the law, seize the coal itself and therefore get direct possession of the value which they, themselves, have created. That remedy being denied, these saffron journals admonish the tax assessor to take the public's share of that wealth from year to year in the form of taxation.

And, thus it happens that every year, a little more of the coal reserve is made to account to the assessor's office and, every year, the assessment levied against the taxed coal land becomes heavier and heavier. The money comes easy; it goes easy. The ready flow of tax money from the reserve of coal land—and incidentally of other natural resources—encourages all sorts of governmental extravagance.

However, this collection of taxes has been a transaction involving money. Going along with it, there is and must be a little matter of bookkeeping. One method of bookkeeping is to charge all of that tax against the current production of coal from part of that or nearby land; add the total tax to the cost of producing the coal; and, collect it from the coal users when they buy their coal supply.

Under that system of bookkeeping, the tax assessors grab money from the coal companies; squander it in governmental extravagance; and the people pay it by a not-very-round-about method.

But, if—as is now the case—the coal operator is not able to sell his coal for the actual cost of production; if the tax is assessed and collected just the same; and, if the payment for taxes has to be made a book record, the operator charges it to capital account against the value of the reserve land. By that process, the payment of the tax is, of course, added to the much discussed "unearned increment" and the value of the land mounts steadily as the tax collections on reserve land continue to increase.

Studied in the light of general economics, that is merely a matter of borrowing money from the future in order to have s o m e t h i n g to spend today. It taxes the future users of coal to pay the bills of legislative extravagance, today.

Most of the time, the operators cannot collect this tax money as they sell their coal. Therefore, most of the time, this tax money, on the reserve land, has to be charged into capital account a n d made a burden on the future users of that reserve land. Thus, most of the money collected, as taxes, on reserve coal land, is borrowed from the future to pay for today's indulgences.

This is particularly true of anthracite. Incidentally, the accumulation of the past tax payments to a great extent accounts for the present value of anthracite coal land and goes a long way toward explaining the royalties about which so much complaint is made these days. It must be remembered that some of these lands have been owned and have been paying taxes for fifty years. It must be remembered that during those fifty years the money paid out as taxes has been accumulating interest—compounded. And, it must be remembered that money out at compound interest doubles itself with amazing rapidity.

The plain truth about the matter is—if we can divorce this subject from maudlin sentiment—that the whole of our coal area is divided into two parcels. One parcel is blocked out for immediate or near future development; it is attached, definitely, to a present working. The other parcel is held in reserve for future development if and when needed.

The land which is blocked out for immediate or near future development is the proper subject of a tax. Whether or not it is blocked out is a matter easily susceptible of detailed proof. If, for example, the land is adjoining a working and necessary to that working, during the normal life of the plant, and if it is owned by the company which operates the working, it is clearly blocked out for development. It is so attached to a working and has been core drilled to prove the existence of the coal, it is blocked out for development. Any one of a dozen standards might be used to determine whether a block of coal is intended for immediate development.

Coal which is not accessible to any immediate working; which cannot be reached by any existing working; and land in which the presence of coal has not been proved by any method, is clearly potential coal land held in reserve and has no other status, for taxing purposes, than that of ordinary real estate. It should not be taxed.

This theory travels rather far—if you can get what it is that I am talking about. Using anthracite as an illustration again. It is obvious that some of the anthracite land is blocked out for immediate development. It should be taxed. It is equally obvious that some of anthracite land is held in reserve for future development. It should not be subject to a tax.

If the tax assessor can go one inch over the border line which separates the developed from the reserve area in anthracite and if he can levy a single mill of taxes against the reserve of anthracite, he can, on precisely the same theory, bring every ounce of reserve coal of the nation upon the tax books as taxable coal. On any such a theory as that, and because our coal reserve is so extensive, an infinitesimal tax on each ton of coal in the g r o u n d would pay the total cost of running all of our government; w o u l d bankrupt every owner of coal land; would put the price of coal, in fifty years, beyond the reach of the human purse, or would put the current price of coal so high that the use of it would of necessity stop. And yet, if one single mill of tax is, in Pennsylvania, levied on the reserve of coal in the ground, the rest of the program is not only possible but logical.

If we are, in this fashion, to allow our vivid imaginations to play upon the possibilities, let us look at the other side of the question. In view of the zeal of the modern publicans, it is rather a stretch of the imagination to take the following assumption. Nevertheless, let us assume that our coal land is thus divided, officially, into two parcels—one set aside for immediate development and taxable and the other held in reserve and not taxable. *Let us assume that the instant a man transfers his property from the non-taxable to the taxable list, it remains, until worked out, in the taxable list.* Let us assume that the whole of the tax demanded from the coal industry is plumped upon the land which is thus reserved for immediate development. It must follow that the tax on the developed land will be higher than it now is. Under those circumstances, any man would hesitate to go into the experiment of transferring his land from the non-taxable to the taxable classification. And, if we had that reluctance to assume a tax load, we might not have so much heedless zeal to get into the coal business—only to play the part of the bull in the china shop.

If we are so keen, as we seem to be, to reduce the over-development of the coal business and to hold, in future, development of coal mines in bounds, this may be one way to do it.

The 1924 Convention

December 24, 1923.

DEPARTMENT OF MINES AND MINING,
Sacramento Chamber of Commerce,
Sacramento, California.

With our best wishes for a Merry Christmas and a Happy New Year we beg to advise that Sacramento's invitation to the American Mining Congress to hold its Twenty-seventh Annual Convention in your city has been accepted by our Board of Directors, the week beginning October sixth, nineteen twenty-four, being tentatively selected. We congratulate you on your aggressive campaign and pledge to you our determined efforts to assist you in making this convention the most notable and unusual of all gatherings of the mining industry.

THE AMERICAN MINING CONGRESS.

Sacramento, Calif., December 24, 1923.

THE AMERICAN MINING CONGRESS
Washington, D. C.

All Sacramento tonight rejoices over her most wonderful and most appreciated Christmas present, the Nineteen Twenty-four Convention of the American Mining Congress, and extends to you and the directors heartfelt greetings of joy. Our executive committee has already started planning to make your session here one long to be remembered and its members extend to you heartiest of season's greetings.

DEPARTMENT OF MINES AND MINING.
By Bert F. Hews, Manager.

THE CASE FOR ANTHRACITE COAL

Anthracite's Major Problems Are Labor Relations and Its Relations with Government—Clearer Understanding of Industry's Problems by the People Necessary

By S. D. WARRINER,
President of The Lehigh Coal and Navigation Company *

NO industry has been so thoroughly or so frequently investigated by state and national commissions, and yet its major problems are imperfectly understood. And almost every day, it seems to us in the industry, there is a contribution to further misunderstanding. One governmental body has recently issued a statement purporting to show exorbitant prices at which anthracite coal is currently being sold. By close examination it develops that this report relates only to a trifling percentage of the output—the so-called "premium" coal—but the headlines convict the whole industry of extortion. Another government official publicly states that he is told that 20 per cent. of the coal shipped contains an unfair proportion of rock and slate. This statement, which could not be based upon investigation of the facts and which I believe to be grossly untrue, carries to millions the belief that they are being swindled as well as overcharged. Out of a multiplicity of such reports as these grows a public opinion that tends to preclude just and wise determinations of public policy.

Admittedly, in contrast with the bituminous industry, anthracite has been stabilized, highly organized, and not overdeveloped. Yet these very characteristics are today the object of critical attack in that it is alleged to be operated under monopoly conditions, and is invested with a public interest, which requires either public regulation or government ownership and control.

Under such conditions, it is obvious that the industry cannot thrive, unless there be mutual understanding of the problems involved in the operation of the industry.

IS ANTHRACITE A MONOPOLY?

At the outset this question arises—"Is anthracite coal a monopoly and so invested with a public interest as to require, in contrast with other industries, a special rule of conduct both in practice and in law?" If we answer, "Yes," to this question, and say that the anthracite industry must be run like a public service corporation, under a special code of business ethics, with regulation as to methods and a limitation as to profits, then, by the same token, we must be prepared to ensure to capital investing in this industry, guaranteed return, and protection from competition, as in the case of public service companies.

The practical result of treating anthracite as a public utility would probably be to fix prices at higher levels than under private control. The government would be obliged to permit, and possibly guarantee, a constitutional return on the investment which would be much greater for the industry as a whole than the existing rate of return as found by the United States Coal Commission. For the ten years beginning 1913 the average margin per ton after deducting federal taxes is about 33 cents. This yields an average return on the book values of the property of less than five per cent., and the book values are substantially lower than the valuations of the engineers employed by the Coal Commission.

If, on the other hand, we answer that anthracite is not a public utility, then the freedom of this industry as a private enterprise must be maintained under the same laws and the same regulations that govern all industries, guaranteed by the American Constitution.

My own answer to this question is, that although anthracite is certainly invested with a public interest in that the people of a limited section of this country find it a desirable fuel, it does not acquire thereby any greater investment of public interest than does any other commodity in common use.

A monopoly cannot be oppressive unless there goes with it public necessity for the commodity monopolized. This is certainly not true with anthracite.

The Coal Commission itself, although claiming anthracite to be a limited monopoly, says, "The main remedy, however, against extortionate prices lies in the consumer himself. There are substitutes for hard coal, and a readiness to resort to them is the ultimate and effective defense against an unreasonable price."

Secretary Hoover's commission of experts appointed to investigate the subject of community storage says emphatically that anthracite is not a public necessity, that in no community examined was it an exclusive fuel, its use varying with its price as compared with other fuels, from 2 percent of the total fuel used in a city like Indianapolis to 60 percent in a city like Buffalo. Even in the heart of New England only 42 percent of the fuel of Worcester was anthracite.

Any proposition, therefore, of government regulation which limits the constitutional rights of investors in this industry must either be prepared to furnish substantial guarantee sufficient to attract capital in the anthracite business by freeing it from competition, or else the effort would be so evidently one of hostile class legislation, aimed at a particular industry, as to be obviously unconstitutional and ineffective.

There are two major problems. First, the industry in its labor relations. Second, the industry in its relations with government.

The question of labor is of predominant importance.

Sixty-nine cents out of every dollar of production cost goes directly to labor. The annual labor bill, for mining practically the same amount of coal, has increased from $113,000,000 in 1914 to approximately $335,000,000 under the terms of the Harrisburg agreement.

Labor relations in the anthracite industry are the direct cause of our present economic trouble. Without constant strikes in the last two years, there would be no shortage of coal, no runaway prices, no present problem of public interest.

Do anthracite wages compare favorably with wages in other industries, and have they been adjusted to compensate for increased costs and higher standards of living?

For twenty-five years, there has been no recession in wage rates, and there has been steadily improved opportunity for employment throughout the year. The industry compares more than favorably with other industries in stability of operation. The average yearly earnings of anthracite workers continuously accepting employment is about $2,000.

As compared with the base period of 1914, anthracite labor has been increased 188 per cent. as against 115 per cent. in manufacturing and 131 per cent. in railroading.

As compared with an average hourly rate of 55 cents in all industries in this country for skilled and unskilled workers, the minimum wage for outside common labor in the anthracite field is 57¾ cents.

Anthracite labor has the protection of the strongest union in America. It is recognized, met with and contracted with in the negotiation of all agreements. Furthermore, there has been in existence since the Roosevelt Award of 1902, an industrial government in the Board of Conciliation with an umpire, under which the worker is protected against injustice or discrimination and through which any grievance, however small, can be arbi-

*At Conference of The American Academy of Political and Social Science.

trated and adjusted. The district presidents of the union on the board and the local representatives in each colliery represent the men. The most advanced social reformer could hardly suggest better protection and it is a fact that no just grievance goes long unredressed.

Working Conditions

Do working conditions conform to advanced standards as to hours of work, opportunities for advancement, for recreation, for education?

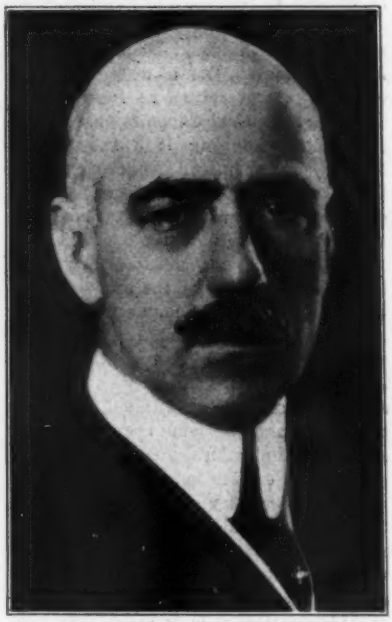
There is the universal eight-hour day. The contract miner seldom works more than three-quarters of this time. There is every opportunity for advancement to the higher positions of skilled miner, many of whom earn $3,000 to $5,000 per year. With an increase in the cost of living compared with 1914 of only about 64 per cent., and increased earnings of 188 per cent., standards of living are obviously improved. Recreation and education in as good schools as are existent in any part of the country are available to all.

Conclusions as to Labor Conditions

These are the outstanding facts of an industrial organization which certainly has the foundation on which a structure of helpful cooperation ought to be built and which challenges the criticism of the most advanced thought—an eight-hour day, high wages, conciliation and arbitration, and a strong union. Yet, curiously, of all the voices raised against the industry, the voice of labor has been the loudest.

As to wages, I recognize the responsibility of industry towards employes and am as insistent as anyone to secure for them the full fruits of their toil. No one doubts that labor today is in the ascendency and if the "white collar" class is not disposed to compete for the increasing fruits of labor they must be prepared to pay the bill. But there is a more fundamental question to be answered. Anthracite is but one branch of our industrial life. "Organized labor is so dominated by the idea of class conflict with the employer on one side and wage earners on the other that it overlooks other conditions of more importance. It fails to see that there may be injustice in the relations between workers in the various branches of industry to each other as well as to the other employers and employed. The rise in the price of fuel reaches beyond the mine owners and the employing class and comes home to the entire body of people who work for wages." There is fundamental injustice in this situation and it is questionable to what extent and how long labor in one basic industry like coal can impose a tax on other labor by increased wages and expect other labor to buy its product.

Criticism of labor relations in the anthracite field is often based upon the conditions of twenty years ago. Whatever may have been the abuses at that time through the dominance of the employer, the union must now see to it that in its own dominance even greater abuses do not exist. The present industrial organization is not working well, ideal though its provisions may be, and the responsibility for this condition must



Samuel D. Warriner

rest with the party in power. The union need no longer be a militant organization. Constructive cooperation and support of the common weal must supplant destructive antagonism. The union reached its present position by bargaining collectively, by keeping inviolate the contracts it made, and by submitting to the arbitration of a third party unsettled disputes. An unfortunate change has now set in. Its present tendency to substitute force for persuasion, to resist arbitration, and to employ direct action by means of illegal strikes instead of appeal to the tribunal of reason provided for in the agreement, are rocks which may wreck its progress in public esteem, just as surely as it may wreck the industry from which it draws its livelihood. Sane leadership must assert itself. Will it meet the emergency?

Present Commercial Situation

No one is more desirous than the operators to keep down prices. They realize the advantages of satisfied customers, and the dangers of a price which invites an invasion of their markets by competing fuels. They are not satisfied with the present situation.

At the present time domestic sizes of anthracite are selling in Philadelphia at an advance of 120 per cent. over 1914. The increased cost of production is approximately 165 per cent. The continued sale of coal at the advanced price is measured simply by the public's willingness to pay for a particular product, of which the supply is limited. At the same time the smaller or steam sizes of anthracite, forming 30 per cent. of the production, are selling below last year's prices simply because of lack of demand and accumulating stocks. Supply is rapidly catching up with demand for the domestic sizes, and this will soon be evidenced in the disappearance of so-called "premium" coal which can only find purchasers in time of scarcity produced by strikes. When supply exceeds demand there will be no coal problem except for the producers and especially the high-cost producers.

Larger domestic use of the smaller sizes of anthracite is an obvious measure of relief. The industry is actively promoting such use, and as an example of what can be done there are in the neighborhood of Harrisburg some 3,000 installations for burning the small buckwheat coal in residences. Encouragement is being given by the industry to all good devices for burning the smaller and cheaper sizes, looking to a broadening of demand in place of the present custom of using only three of the eight sizes of anthracite that are necessarily produced.

Relations With Government

This is a delicate problem. Restrictive laws forbid cooperative action, essential to efficiency and self-regulation, while the public and public officials blame the industry for lack of self-regulation. Group responsibility cannot justly be visited on any industry where laws deny freedom to act as a group. Out of this contradictory situation have arisen most of the difficulties of the anthracite industry and obstacles to improved service in the interests of the public.

Although the United States Coal Commission found that "Coal and transportation are a single service," our legislative, our executives and our courts have spent years in divorcing these activities.

Transportation Rates

Although transportation rates are regulated and fixed by a governmental body and the operators have no control over them, nevertheless public criticism has been directed against anthracite freight rates, and operators have been just as much criticised on this ground, as on any other account. Public regulation in this respect at least has not brought greater public satisfaction than

private management in the anthracite industry.

ANTI-TRUST LAWS

The anti-trust laws are perhaps the greatest cause for inconsistent policies and unjust criticism. The public criticises the entire anthracite industry for the occasional malpractices of a few and denies that industry freedom to cooperate for their correction. As a case in point, it has been suggested by the governor of Pennsylvania that the operators endeavor to control the activities of some 55,000 retailers by refusing to sell coal to those who charge higher retail prices than in 1922. Under the decision of the courts, we cannot under existing laws, federal or state, resort to such measures.

It has been suggested that the arrangement proposed by the governor, although forbidden by the Sherman Act, would be lawful under the common law of Pennsylvania as confined to purely intrastate transactions. Even if this were so, the result of the arrangement would be to benefit the consumers of the small percentage of anthracite coal which is used within the boundaries of this state, at the expense of the consumers in all the other states.

This leads to the question, should we not revise our anti-trust laws as applied to industry of this character and place upon the industry—for a fair trial at least—the full power and responsibility of self-regulation? Certainly it is not sound public policy to transfer from experienced managers to the political arena, the regulation and control of this industry until the managers have been given an opportunity to try and work out their problems under laws which permit collective action and self-correction.

There is grave danger that the popular sport of hunting coal operators will frighten capital from the industry and thereby injure those workers and communities dependent on it without the slightest benefit to the consuming public. Give a dog a bad name and you know the result. Efforts to discredit the industry and unfairly regulate or tax it will in the end militate against the best interests of the state.

TAXES

For example, Schuylkill County is endeavoring to base its taxes on a valuation of $437,000,000 as compared with previous valuations of $62,000,000. Other counties do likewise. Thus an exaggerated valuation is placed on the property within the state for the purpose of local taxation, while the Coal Commission presents figures of only a fraction of this amount for the purpose of determining what is a fair rate upon invested capital.

An extraordinary situation has arisen in connection with the Pennsylvania anthracite tax. Last winter anthracite prices were controlled by the Pennsylvania Fuel Commission, and the operators kept down the price in the public interest. But when the operators made returns required for this tax, based upon the prices at which their coal was sold, the Auditor-General announced that these prices were below the market value of coal and that the Commonwealth has assessed for taxation the coal sold during the control period at much higher prices, thereby asserting as a fact that, generally speaking, the operators have sold their coal for less than it was worth.

Has not the time arrived for the public and the government to change its attitude of blind hostility and to endeavor to reach a clear understanding of the essentials of the industry with a view to constructive cooperation in the interests of all concerned? The anthracite industry, I believe, is managed by men who in ability, character and consciousness of social responsibility are the equal of other captains of industry. All of its decisions on major policies are of necessity made with a regard to public opinion and public interests. The industry performs a useful service, pays high wages, observes good working conditions, cooperates in community welfare and takes unto itself a margin of profit which is moderate indeed as business standards go.

The embarrassing situation in which it finds itself is not due to the selfishness or stupidity of anthracite operators, but to obstructive laws and the inherent intricacy and difficulty of the problems with which it is confronted. Its principal danger is that an all too busy American people will not find the time or opportunity properly to study those problems before passing judgment. But—

"On fires that burn with heat intense,
Let's turn the hose of common sense."

MINING ACTIVITIES OF THE GEOLOGICAL SURVEY

IMPORTANT investigations into the mineral resources of the United States and Alaska were conducted last year, according to the annual report of Director George Otis Smith of the Geological Survey. Summarizing the activities, he shows the following accomplishments:

Determination of mineral resources in 32 states; study of ore deposits in 10 states and the publication of 16 reports; studies in 8 states to determine prospects of obtaining oil and gas, on which 20 reports were issued; laboratory researches to determine sources of petroleum; publication of a map of the oil and gas fields, pipelines and refineries for the United States, and separately for Kentucky, West Virginia and Southern California; sampling of coal beds in nine states and the issuance of six reports; cooperation with the forest service, land office and Indian office in examination of lands to determine whether they contain oil, gas or other mineral deposits; assistance to the Coal Commission by statistical records and expert advice; cooperative field studies of ore deposits and coal beds in Virginia, North Carolina, Alabama and Idaho; identification of fossils for the service of drillers of oil and gas; publication of forty reports on mineral resources of different parts of the country.

In Alaska the work covered the following:

Examination of mineral resources adjacent to the Alaskan railroad in the Chitana Valley, Fairbanks, Wrangell and Chandalar districts, and Prince William Sound, and a determination of the general condition of the mining industry of Alaska; geologic and topographic survey of oil fields in the Alaska peninsula; investigation upon request of the navy of oil resources of naval petroleum reserve No. 4 on the Arctic coast of Alaska; issuance of reports on deposits of tin ore on York peninsula, on deposits of chromite on Kenai peninsula and on copper deposits of the Kotsina-Kuskulana district.

Other activities of the survey embraced the examination and identification of more than 2,000 specimens of rock and minerals and 700 quantitative analyses; laboratory studies of chemical changes by which copper is formed in nature; cooperation with 16 states in the collection of annual statistics of mineral production; compilation of information on mineral production of other countries, especially on coal and petroleum; classified 408,123 acres of land with respect to coal, 162,949 acres with respect to petroleum and increased the area of defined oil and gas fields by 77,989 acres; reported on 5,162 applications for permits, leases or patents involving public mineral lands.

"The universities, many of which have adjusted their operations to the altered economic situation in the United States by increased budgets, promise to displace the mining industries as the chief source of losses from the trained staff of the survey," the report says. It notes many demands for new and important studies of great prospective value to science and to the mining industry.

Research of interest to the mining world included that on silver, in the San Juan mountains of Colorado; copper in the Tyrone district of New Mexico; ore deposits of Shoshone County, Idaho; manganese in eastern Tennessee and the Batesville district of Arkansas; and oil shale of the Rocky Mountain region. It is stated that southeastern Idaho contains some of the most valuable rock phosphate beds of the west.

REVENUE BUREAU AND TAX BOARD REPORTS ON PROGRESS

Revenue Commissioner Discloses Difficulties in Administration of Revenue Laws—Tax Simplification Board Points Way to Elimination of Difficulties

THE Commissioner of Internal Revenue in his annual report for the fiscal year ended June 30, 1923, cites statistics relating to the adjustment of claims that are startling to the layman. These statistics show how seriously the business of the country is disturbed by income tax problems. It is little wonder that the Secretary of the Treasury in his recommendations to the Ways and Means Committee of the House of Representatives, and the Tax Simplification Board in its report to the United States Senate, emphasize the need for more efficient and economical administration of the internal revenue laws.

Enormous Erroneous Assessments

During the fiscal year 1923 a total of $460,818,099.95 in additional taxes was assessed, of which amount $132,525,380.55 was assessed without giving the taxpayer the benefit of appeal in order that the collection of the tax would not be jeopardized. During the same period, however, a total of $440,173,211.82 was refunded, abated or credited.

The report states that the cost of collecting internal revenue taxes for the year amounted to $36,501,062.94, or $1.39 for every $100 of taxes collected. It is stated that in the face of decreased revenue receipts the bureau is forced to maintain its large organization to audit the returns filed for prior years, which audit results in the refund as well as in the assessment of additional taxes. The result of the decreased revenue yield and the maintenance of the large administrative body results, necessarily, in an increase in the cost per dollar of collection, it is said.

Turnover in Personnel

Efforts to maintain a qualified staff of engineers and auditors are said to have met with discouraging results. The infrequency and inadequacy of promotions are factors, according to the report, which lead experienced and able members of the technical staff of the Income Tax Unit to resign from the service upon offers for lucrative employment from business organizations. The report states that changes have been made in the Natural Resources Division which should result in the disposition of the remaining 1917 and 1918 cases by March 1, 1924.

The report states that in the Natural Resources and Special Audit Division progress on the whole has not been entirely satisfactory on account of difficulty in employing and retaining competent personnel and lack of space. Measures are being taken, it is said, to remedy these difficulties and to bring the work to a degree of currency. Specific instructions have been issued against reopening cases once closed unless there is evidence of gross error or fraud, according to the report.

TREASURY ANNEX,
INTERNAL REVENUE DEPARTMENT

Appealed Cases

The number of appeals taken before the Committee on Appeals and Review totaled 3,889 for the year. The extraordinary growth in the work of this committee has necessitated an increase in personnel which now numbers 20 members, including the chairman. During the year a field subcommittee of the Committee on Appeals and Review was established for the purpose of hearing the appeals of taxpayers from states distant from Washington, particularly those west of the Mississippi River. This subcommittee functions as a part of the central committee, its decisions being reviewed and approved by the central committee. Offices were first established in St. Paul, Minnesota, and about 150 appeals taken by taxpayers in the states of Minnesota, Wisconsin, North Dakota, South Dakota, Iowa and Montana were heard and disposed of. The subcommittee later moved to the Pacific Coast to hear about 175 cases of taxpayers in the states of Washington, Oregon, Utah, California, Arizona and Colorado. The report states that the progress of this administrative policy has been entirely favorable up to the present time.

With respect to protests and claims made by taxpayers in connection with their tax cases, the report states that the policy of the bureau of affording every taxpayer upon protest an opportunity to place before it, by correspondence or in person, additional information or evidence that may support the protest or claim has been carefully observed. It is stated that much of the time of the deputy commissioner and staff and the review committees of the respective divisions is taken up with conferences afforded taxpayers. The number of employes in the internal revenue service on June 30, 1923, was 20,995. Approximately 17,500 of these employes deal with taxation.

The Tax Simplification Board

The Revenue Act of 1921 created a Tax Simplification Board to investigate the procedure of and forms used by the Bureau of Internal Revenue in the administration of the internal revenue law and to make recommendations in respect to the simplification thereof. This board has been in existence for two years. It has made many formal recommendations to the Secretary of the Treasury and the Commissioner of Internal Revenue, and has made numerous informal recommendations and suggestions to the responsible heads of units and divisions of the bureau. Its investigations disclosed the fact that this basic improvement in procedure could only be effected by legislation and that simplification of procedure in some vital respects could only be secured by changes in substantive provisions of the revenue act. The board, therefore, has made a number of important recommendations to Congress in its report to the United States Senate.

Independent Tribunal Needed

It is believed that this report is of sufficient interest to taxpayers to justify the publication of as much of it as space will permit. The board states that it has been availed of by taxpayers as a kind of grievance committee. It states that many specific instances of hardship resulting from the administration of tax laws have frequently disclosed ill-advised procedure. With respect to the handling of appealed cases, the board out-

lined the efforts it made to have appeals of taxpayers decided by the tribunal which heard the evidence and the argument, and not by some other officer or tribunal before whom or which the taxpayer had not appeared. Many of the reasons why a board of tax appeals, independent of the Bureau of Internal Revenue and the commissioner, should be created, as recommended by the American Mining Congress in a resolution of its convention in 1920 at Denver and reiterated by subsequent conventions, are set forth in the board's report.

It is pointed out that taxpayers will never be able to have the fair and independent review of their claims to which they are of right entitled as long as the appellate tribunal is directly under, with its recommendations subject to the approval of, the officer whose duty it is to administer the law and collect the tax. As long as the appellate tribunal is part and parcel of the collecting machinery, according to the report, it can hardly maintain the attitude essential to a judicial tribunal. It is this situation, says the report, that caused the Tax Simplification Board to make the recommendation relative to the establishment of a court of tax appeals, hereinafter set forth. The board outlines its conclusions, in part, as follows:

Re-opening of Closed Cases

"In surveying the work of the Income Tax Unit, it was discovered that even after the return of a taxpayer had been audited, an additional tax liability found, the amount thereof assessed and subsequently paid by the taxpayer, and the case marked closed, it frequently happened that the case was reopened by an auditor or other official of the Income Tax Unit, of his own motion on account of some new ruling or decision. The taxpayer was, thereupon, notified and the questions of additional tax liability or overpayment were again gone into, although the amount thereof had been previously settled.

"As long as such procedure prevailed, the work of the Income Tax Unit was materially increased and there was no chance of the taxpayer knowing definitely what his tax liability was short of the period of the Statute of Limitations and, indeed, not even then; for in many cases he had been induced to sign a waiver of the statute. This practice appeared to our board to be disastrous to the orderly procedure of the administration of the revenue law, grossly unfair to the taxpayer and productive of little, if any, benefit to the government.

"Our board brought this situation to the attention of the commissioner, and, in pursuance of our recommendation, he issued an order that cases once closed should not be reopened except in case of fraud or gross error.

"Our board came early to the conclusion that it would be highly beneficial to have a survey of the Income Tax Unit made by a man trained in business organization and systems. For reasons which appeared to be sufficient, the task was postponed until last summer. A survey was thereupon conducted which resulted in recommendations of changes and reorganization designed to eliminate red tape, fix responsibility and do away with the confusion and loss of time incident to transferring cases from one division to another. These recommendations

> **"The decentralization of the income tax unit by transfer of the audit of returns to collectors' offices, and the adoption of measures leading to the extension of authority and discretion to field officers in order that disputed items and apparent errors and omissions may be adjusted while there is convenient opportunity for necessary conferences with taxpayers, are needed administrative changes."—From the Mining Congress Journal, October, 1921.**

were put into effect by the deputy commissioner in charge of the Income Tax Unit.

Decentralization

"By the term 'decentralization' in this report is meant and intended procedure whereby the returns of taxpayers shall be audited, questions arising in connection therewith determined, and any change in tax liability from that shown in the return settled in various local offices throughout the United States as convenient as possible to the residences of the respective taxpayers. To this important subject our board has given its most earnest consideration.

"It is a canon of taxation that the tax should be levied at a time when and in a manner in which it is most likely to be convenient for the contributor to pay it. Under the revenue law of 1918 and its successors, the taxpayer is required to return his income on March 15 of the year subsequent to the year in which it was earned and to pay the tax indicated to be due in accordance with the return on that day or in quarterly installments thereafter.

"Under the administration of the laws the government assesses any additional taxes at any time within five years thereafter. The inconvenience to the taxpayer of such procedure is manifest and the loss to the government in interest alone must be enormous. In addition to this, the taxpayer is required to maintain unproductive reserves of capital during the entire period of the Statute of Limitations, which otherwise might be devoted to business enterprises and be productive of income subject to tax. The expense to taxpayers resulting from trips to Washington to settle their tax liability or from the employment of counsel here is estimated to involve tremendous sums in the aggregate. Complaints which have come to our board, experiences which have been related to the various members thereof, and our own study of the situation have convinced us that it is next to impossible to settle satisfactorily any complicated question of tax liability by means of correspondence between the taxpayer and the auditor at Washington.

"From the standpoint of the government's interests it is the opinion of the board that the audit of returns could be carried on in a number of district offices as satisfactorily as is now being done at Washington. From the standpoint of the taxpayer, there would be manifest advantages. It is difficult, if not impossible, to settle controversial points by correspondence. A personal conference usually results in mutual understanding and, even where the decision is adverse, the taxpayer feels that he has had his opportunity to make his position clear.

Field Adjustments

"At the present time there are 34 internal revenue offices in the various sections of the United States, each under a revenue agent in charge, who reports directly to the Income Tax Unit at Washington. While this field force makes examinations when instructed so to do from Washington, they have no power to settle and determine cases and can only report their findings to the Income Tax Unit at Washington, where the tax is settled.

"The present deputy commissioner in charge of the Income Tax Unit has recently issued an order providing for conferences between the internal revenue agent in charge and the taxpayer prior to the submission of the report of the internal revenue agent in charge to Washington. The deputy commissioner is to be complimented on this order and if it is carried out sympathetically it will doubtless be productive of good results. It is still required, however, that the report of the internal revenue agent in charge be submitted to the Income Tax Unit at Washington for review. The point to which we desire to draw attention is that the internal revenue agent in charge does not settle the tax under the direction of the commissioner as the Income Tax Unit does; but makes his report to the Income Tax Unit, which thereupon proceeds to settle the tax, acting for and under the direction of the commissioner.

Income Taxation to Stay

"We do not conceive it to be the function of our board to work out all the details of such an establishment and cer-

tainly not to state them in this report. We do not advocate the sudden disruption of the Income Tax Unit. The organization here should complete the audit of returns upon which it is now engaged. The working out of the plan of decentralization should be one of evolution and should be proceeded with step by step and in an orderly manner. Income tax laws are now apparently a permanent policy of our government. The present procedure was worked out in the stress of war times when a mountain of work was encountered, but it behooves us now that we are on the plain of peace to establish procedure which will result in efficacious administration of the revenue laws with as little vexation to the public and as little hampering to business as possible. The board approves the principle of decentralization and recommends that it be put into effect.

"No legislation is necessary to decentralize the Income Tax Unit. It can be carried into effect by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury. Plans for decentralization are now receiving the consideration of the department and the bureau, and our board expresses the hope that a satisfactory solution of the problem soon will be worked out.

"There are numerous reasons why the Income Tax Unit is so far back in its work. Without going into these reasons at length, the main ones may be mentioned, as follows:

"1. The difficulty involved and the time required in determining invested capital and deciding complicated questions arising out of the excess profits tax laws.

"2. The making of valuations in order to compute profit or loss on the sale of capital assets.

"3. The valuation of natural resources for the purpose of depletion.

"4. The attempt to determine tax liability and decide questions arising in the audit of returns at Washington of taxpayers resident and property situated in different places all over the United States.

"5. The importance of every question where the tax rate is high and necessity of minute investigation to do justice to the taxpayer and protect the government.

THE BOARD OF TAX APPEALS

"In the foregoing portion of our report dealing with the recommendations made touching the procedure of the Committee on Appeals and Review, we adverted to the anomaly of providing for an appeal by a taxpayer from an additional assessment of taxes proposed to be made by the Commissioner of Internal Revenue and prescribing that this appeal be taken to the officer who had announced his intention of making the additional assessment. The function of the Commissioner of Internal Revenue is to assess and collect the taxes. This function is administrative and not judicial.

"The appeal given to the taxpayer from the action or proposed action of the commissioner should be to a judicial body independent of the commissioner. It should be borne in mind that this appeal by the taxpayer must be heard and decided before the additional tax is collected. It is, therefore, important that the appellate tribunal be so constituted that its decisions may be made expeditiously and its work kept approximately current with the appeals which are taken to it. If this were not so, the collection of the public revenue would be seriously impeded. It is, therefore, essential that the number of persons on the Board of Tax Appeals may be increased or decreased according to the influx of work. To insure the proper functioning of the board so as not to impede the collection of revenue, it would seem advisable that the appointments to the board be made by the Secretary of the Treasury.

"Adequate salaries should be provided to secure the services of able men, for the questions that will come before them will be difficult and will involve large sums. In establishing such an appellate body, the following essentials should be borne in mind:

"(a) The board's decision should be independent and not subject to review by the Commissioner of Internal Revenue;

"(b) Its proceedings should be informal;

"(c) Its membership should be capable of expansion or contraction in order to dispose of the work;

"(d) The members should be appointed by the Secretary of the Treasury.

"If a taxpayer is dissatisfied with the decision of the Board of Tax Appeals he should be required to pay his tax, but should still have the opportunity of bringing a suit in court to recover back the amount paid. If the Government is dissatisfied with the decisions of the board, it should be permitted to bring suit in court to collect the asserted tax liability, but should not be permitted summarily to assess and collect the tax.

"It is the belief of our board that if such a tribunal were established, taxpayers would feel that they would receive a fair and impartial hearing before being required to pay any additional tax assessments. We believe that the law creating the board should be so drafted as to permit the members to function in groups in various parts of the United States."

Resolved, That the American Mining Congress reiterates its recommendations of 1920 for a Tax Settlement Board or Tax Court of Appeals to function independently of the Bureau of Internal Revenue with broad equity powers to hear and decide all appeals in cases where the taxpayer claims to be aggrieved.

[*Resolution No. 15 passed by the 26th Annual Convention of the American Mining Congress, Milwaukee, September*, 1923.]

OIL PRODUCTION WANES

ACCORDING to testimony of Director Bain of the Bureau of Mines, before the Senate Public Lands Committee, the present period of overproduction in the oil industry will end by the middle of 1924. Geologist David White of the Geological Survey gave it as his opinion that within five years this country will be required to import oil, as by that time production will not equal consumption.

The testimony was given in connection with the investigation of leases of government oil lands. The Federal Trade Commission in its annual report attacks the lease to the Sinclair interests of the naval oil reserve in Wyoming, declaring that "the alliance between these interests and the Standard of Indiana for marketing oil constitutes another effort to reintegrate monopoly in the petroleum industry."

LABOR EFFICIENCY

THE Department of Labor is investigating the productivity and efficiency of labor in the coal industry to determine the output per man per hour and the labor cost of production. It is planned to extend the investigation to other basic industries.

PRODUCTION INCREASED

President Barnes, of the U. S. Chamber of Commerce, in discussing enlarged production per worker through invention, gave illustrations as follows:

In the steel industry, one or two men now with unloaders, replace twelve to twenty men unloading by hand.

In furnace charging, by use of skip hoist, larry car and automatic weigher, two men replace fourteen.

In pig casting, seven men with casting machine replace sixty.

In open hearth operation, one operator with charging machine replaces forty hand chargers.

With traveling cranes, twelve men pouring replace thirty-seven.

Two men unloading pig iron with electric magnet and crane replace one hundred and twenty-eight.

In coal mines an automatic conveyor for pier unloading with 12 men replaces 150 men.

MINING IN ALASKA IN 1923

Value of Mineral Production Greater Than 1922. Decrease in Gold Production, but Coal and Copper Production Increased About 20 Percent

THE Department of the Interior has announced by the advance statements of the Geological Survey that mines in Alaska produced $20,300,000 worth of minerals in 1923, as against $19,500,000 in 1922. The total value of the mineral output of Alaska since 1880 is $518,000,000. These figures are taken from the annual report of Alfred H. Brooks, Chief Alaskan Geologist, now in preparation. The source of this mineral wealth is approximately as indicated in the table below.

Value of Mineral Output of Alaska in 1922-23

	1922	1923
Gold	$7,422,367	$6,150,000
Copper	10,525,655	12,500,000
Silver	729,945	600,000
Lead	41,477	60,000
Coal	430,639	600,000
Petroleum, marble, gypsum, platinum, etc.	356,282	310,000
	$19,506,365	$20,300,000

Gold Lodes

In spite of the adverse economic conditions, the search for and development of auriferous lodes showed decided progress during the year. Though no new projects for the exploitation of large gold-bearing quartz deposits are in view, it has come to be realized that Alaska affords many good opportunities for the development of promising rich auriferous lodes.

The Salmon River district, at the head of Portland Canal, contains many promising gold and silver properties that have been considerably developed but as yet no productive mines. A. F. Buddington reports that in 1923 the prospectors found a western extension of the metalliferous belt of the district containing some promising gold and silver prospects, notably in the valley of Texas Creek. In the Ketchikan district a newly discovered auriferous lode on Helm Bay was developed during the year, and a small mill was installed. Further work was also done on the Moonshine silver-lead deposit at Cholmondeley Sound, Prince of Wales Island. The continued successful mining of very low-grade auriferous lode ores at the large Alaska Juneau property is the most important event of the Alaska quartz-mining industry of 1923. The output was much larger than in 1922. Interest in auriferous lodes was renewed by the discovery of rich ores on Hawk Inlet and on Windham Bay.

In the Sitka district the large Chichagoff gold mine was operated to its full capacity until July, when a change of ownership led to the shutting down of operations. The new owners did not resume productive mining before the end of the year. Productive work was continued at the Hirst-Chichagoff mine, which is equipped with a five-stamp mill. The Apex-Nido mine, near Lisianski Strait, on Chichagoff Island, continued development and at the end of the year began the installation of a ten-stamp mill. Developments were also continued on gold properties near Pinta Bay and Falcon Arm. According to A. F. Buddington, who examined some of the nickel-bearing copper ore in the Sitka district in 1923, work has been continued on these deposits, and though it appears that no ore bodies of proved commercial value have yet been developed, further underground exploration is fully justified. The nickel occurs with pyrrhotite and chalcopyrite in association with gabbro and norite intrusives. In 1923 work was continued on nickel deposits in the Bohemian basin, in the eastern part of Yakobi Island, and new deposits were found at Surge Bay, on the east coast, and Takanis Bay, on the west coast of that island. In 1923 nickel ore was also found 100 miles to the south, at Snipe Bay, on the west coast of Baranof Island. These widely separated nickel deposits, including that of the Alaska Nickel Mines Co., on the northwest side of Chichagoff Island, occur under the same geologic conditions and lie along the same structural trend, a fact which suggests that other nickel deposits may be found between them.

During the year there were no considerable developments of auriferous quartz in the Copper River basin, on Prince William Sound, or on Kenai Peninsula, where only five small mines were operated. Auriferous quartz was discovered at Nuka Bay, at the southern end of Kenai Peninsula. Five lode mines were in operation in the Willow Creek district in 1923, making a gold output of over $200,000. More important is the fact that deep exploration of the lodes is now well under way, which should reveal precise information about the vertical distribution of the valuable gold deposits in the district. Some chalcopyrite ore was found in the mountains about 10 miles east of Matanuska station, on the Alaska Railroad. The reports of prospectors indicate a large deposit. A lode carrying ruby silver was discovered at Portage Creek, 12 miles east of Chulitna station, on the railroad.

The completion of the railroad has stimulated gold-lode mining at Fairbanks. Here three or four mines were productive in 1923, and this number will probably soon be augmented. These mines are small, but they made a total output of about $200,000 in gold in 1923.

In this brief review it will be impossible to mention all the recent discoveries of lodes in inland Alaska. In the Bonnifield district, 50 miles south of Fairbanks, considerable work was done on a bismuth-bearing auriferous lode, which, however, is too far from the railroad to permit its profitable exploitation now. Some silver-lead ores were mined on two properties in the Kantishna district, 60 miles from the railroad, but these, like other properties in the region, must await road connection to justify large development. Small rich gold quartz veins have long been known

in the Iditarod district. This year a project was started to develop one of these and to install a small stamp mill.

In 1923, 20 Alaska quartz mines produced about $2,575,000 worth of gold; in 1922, 25 mines produced $3,138,585. This decrease is largely due to the fact that the large Chichagoff mine was operated only half the year. The silver and lead produced in Alaska was a by-product of gold and copper mining, except that obtained from the galena ores of the Kantishna district. In 1923 Alaska mines produced about 658,000 ounces of silver and 400 tons of lead.

Gold Placers

A large number of the placer deposits in Alaska occur in semi-arid regions, where the annual precipitation is only from 10 to 20 inches. In many districts even a wet season may not supply water enough to sluice all the gravel that could otherwise be profitably mined. On the other hand, if the snowfall is light the spring freshets may not suffice to wash the auriferous gravels accumulated by the deep winter mining. Again, if the summer rainfall is below normal open-cut mining may lag, because streams do not furnish the water needed for sluicing. On the average, an extra dry season occurs about once in four or five years, and this always curtails gold production. There was such a season in 1923, which caused a decline of $800,000 in the value of the gold output as compared with 1922. Indeed, had it not been for the improvement in gold dredging the loss of output from placers would have been much greater.

Many of the Alaska placer mines are at best operated at a small margin of profit. There is therefore danger that a disastrously dry year may have a far-reaching effect on the industry by finally discouraging the operators of many small mines. Should a large percentage of miners of this class withdraw from the industry the more normal annual output of gold will be restored only after gold dredges are built.

Gold dredge mining was successful in 1923. In addition to the dredges that were operated during the year four or five more are projected, some of which will be productive in 1924. It is significant that in spite of the adverse conditions that now affect all gold miners, gold dredging is on the increase in Alaska.

In 1923 twenty-four gold dredges were operated in Alaska, and produced $1,870,000 worth of gold; in 1922, twenty-three dredges produced $1,767,000. It was so dry in 1923 that even some of the dredges suspended operation for part of the summer for lack of water enough to float their machines. In 1923, fifteen dredges were operated on Seward Peninsula and produced $860,000. The other dredges were distributed as follows: Two each in Fairbanks, Iditarod, and Innoko districts, and one each in McGrath (Kuskokwim), Circle, and Yentna districts. In 1922 an average recovery of 55 cents to the cubic yard of gravel excavated was made by the Alaska dredges. Ten years ago 12 per cent, in 1922 about 40 percent, and in 1923 about 50 percent of the Alaska placer gold output was produced by dredges.

The palladium and platinum mine in Ketchikan district is still closed. The platinum output in Alaska in 1923 was a by-product from gold placer mining. Tin mining has also been suspended, but a little stream tin was won from the gold placers.

Copper

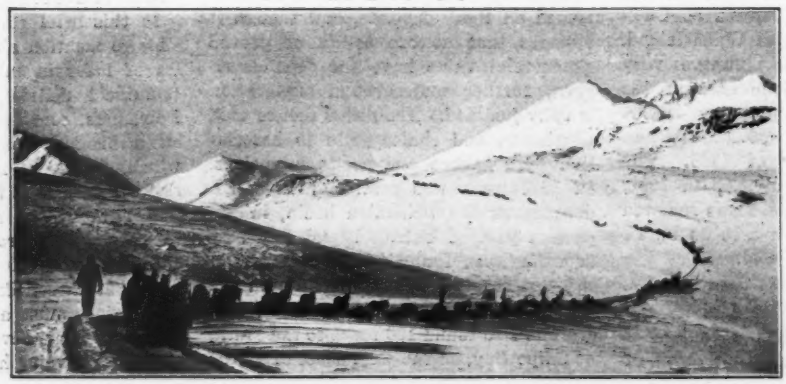
In spite of the continued low price of copper the output in 1923 was about 86,000,000 pounds, 9,000,000 pounds more than in 1922. Most of this copper was produced from the large mines of the Kennecott group, in the Chitina Valley, and from the Beatson-Bonanza mine, on Prince William Sound. In 1923, as for many years, copper was also produced at the Rush and Brown mine, in the Ketchikan district.

The prospecting of Alaska copper deposits was continued at many places but chiefly on a small scale. The two most important developments, which were visited by F. H. Moffit, were as follows: Underground exploration of the Green Butte Group, in the Chitina region was vigorously pushed in 1923 and some ore was hauled over a wagon road to McCarty and shipped over the railroad. The ore is chalcocite and copper carbonate similar to that of the Kennecott mines. It occurs in the Chitistone limestone near its contact with the Nicolai greenstone. The developments made reveal the occurrence of ore in three beds of limestone aggregating 16 feet in thickness. Mr. W. A. Dickey continued to develop his copper deposit at Rua Cove, Knight Island, on Prince William Sound. The total length of drift and crosscuts on this ore body is now about 1,800 feet, which is much greater than the length erroneously reported by the Geological Survey last year. This deposit occurs along a fault zone that traverses a complex of greenstone and chert or quartzone rock, possibly altered sediments, and consists principally of pyrrhotite and some chalcopyrite. The mine workings make their entrance on the seaward slope of a mountain that rises steeply to the north of Rua Cove. Here the outcrop is traceable to a height of 750 feet above the mine level. The fault zone has been traced north of the mountain crest for a distance of more than a mile and reveals the presence of copper mineralization at a number of places.

Coal

In 1922 Alaska produced 79,000 tons of coal from twelve small mines and in 1923 about 100,000 tons from the same number of mines. The largest quantity came from the Evan Jones mine, in the Matanuska field, and the Healy River mine, in the Nenana field, both served by the Alaska Railroad. The significant feature of the year is that the Territory is supplying more and more of its own fuel.

Though some exploration of the high-grade coal of the Matanuska and Bering River field was continued in 1923, it has not yet been proved that these fuels can be mined cheaply enough to find an export market. Meanwhile evidence of the enormous reserves of lower grade bituminous and lignitic coals in Alaska is accumulating each year. S. R. Capps reports the finding of workable beds of coal carrying about 60 percent of fixed carbon at Mile 341, on the Alaska Railroad. This coal, which has been opened up, occurs in the Cantwell formation (Eocene), which is widely distributed in this region and long known to carry small seams of coal, but this is the first bed found that has been proved to be of commercial value. The bed mined is from 5 to 6 feet thick. The discovery of the bed itself is significant, as it is easily work-

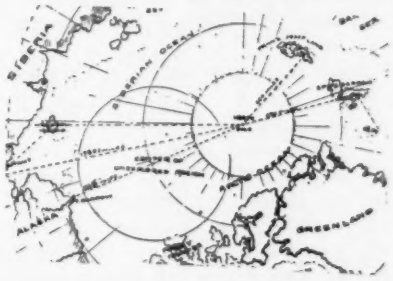


able and very accessible. Of possible greater significance is the proof of the presence of a new coal-bearing formation near the railroad.

Though the development of Alaska's very high-grade coal has thus far been disappointing, there are vast coal reserves of less fuel value in the Territory, and a considerable percentage of these has been made accessible by the government railroad. There can be no reasonable doubt that these reserves will eventually be drawn upon to supply the growing population of the Pacific seaboard.

There are enormous areas of coal-bearing formations in northern Alaska, though most of them are now too inaccessible to be utilized. William T. Foran, of the Geological Survey, who last summer explored the Arctic littoral between Cape Beaufort and Wainwright Inlet, found evidence of a northern and inland extension of the Corwin coal beds. Mr. Foran found some gently folded coal beds on Kukpowruk River, 5 or 6 miles from the coast, which dip from 20° to 40° and are not broken. Some 13 beds were seen, 4 to 10 feet thick. Though not yet analyzed, these coals appear to be of the quality of the Corwin coals, which are sub-bituminous. This part of the Arctic coast is accessible to vessels from 2 to 3 months, and it affords better shelter than that at Corwin. These coals, which are probably of Jurassic age, might be utilized to supply Nome and northeastern Siberia.

COAL POSSIBILITIES IN POLAR REGION



EARLY in December Secretary of the Navy Denby appointed the Naval Arctic Air Board to investigate and report on the feasibility of an expedition to the North Pole.

The board's recommendations were recently made public. The members of the board approve of the expedition and urge the use of the naval airship *Shenandoah* for the flight, and of Nome, Alaska, as the main operating base. Secretary Denby has approved the report, and if plans are completed the flight will be undertaken during the coming summer.

Though of a scientific nature, the proposed expedition carries with it the possibilities of finding coal or other mineral deposits in the vast unexplored area of a million square miles which lies between Point Barrow, in Alaska, and the Pole, and of using Alaska as a starting point for trans-polar air lines.

Possibilities of Mineral Deposits

Lieut. Comm. Fitzhugh Green, member of the MacMillan polar expedition of 1917, pointed to the recent development in coal mining which has made Spitzbergen, on the European side of the Pole, of high economic value.

The islands of Spitzbergen, by a treaty signed in 1921, were put under the Norwegian flag.

The coal mined there is a good grade of steam coal, and the resources have been estimated at 2,000,000,000 tons, consisting of coal of the Tertiary period of formation.

The production in 1919 was 90,000 tons, in 1921 172,500 tons, and in 1922 306,000 tons, practically all of which went to Norwegian ports.

The mines are worked all the year round, although means of transportation to the continent are only available for the few months of the summer.

Spitzbergen has large deposits of low grade iron ore, gypsum and some asbestos. Signs of oil have been reported.

These islands are at a distance of 650 miles from the Northern Axis. The unexplored area under consideration centers around a point in approximately the same latitude, north of Point Barrow.

Would Benefit Alaska

The probable existence of this land is a strong argument in favor of Alaska as a starting point for the flight, and further, though seemingly a speculative possibility, it is reasonable to assume that Alaska would be greatly benefited should any trans-polar air lanes materialize.

Pointing out that the straight line is the shortest distance between two points, many aerial and polar experts hold that such an air line between the Old World and the New will be a regular communication course in the near future.

"Commercial air routes over the Arctic are practicable today," says Secretary Denby, "if we take the word of explorers and men who have spent a great part of their lives in the Arctic."

Point Barrow, Alaska, is so located that it would be the natural "hopping off place" for flights one way, and the landing station for flights from the opposite direction.

It must be remembered, however, that although Spitzbergen and the center of the unexplored area on the opposite side of the Pole are in approximately the same latitude, they are not subject to the same climatic conditions. Spitzbergen has a milder climate because of the Gulf Stream which sweeps up the Atlantic.

This expedition promises to be of untold value in three lines: (1) exploration, (2) scientific investigation, and (3) pioneer work for commercial air routes.

MINE DEPLETION ALLOWANCE

PROVISIONS of the revised tax bill affecting mining as recommended to Congress by the Treasury propose that the depletion clause reads:

"The basis upon which depletion, exhaustion, wear and tear, and obsolescence are to be allowed in respect of any property shall be the same for the purpose of determining gain or loss upon the sale or other disposition of such property, except that—

"(1) If the property was acquired before March 1, 1913, the basis shall be its fair market value as of that date; and

"(2) In the case of mines, oil and gas wells, discovered by the taxpayer after February 28, 1913, and not acquired as the result of purchase of a proven tract or lease, where the fair market value of the property is materially disproportionate to the cost, the basis for depletion shall be the fair market value of the property at the date of discovery or within 30 days thereafter; but such depletion allowance based on the discovery value shall not exceed 50 percent of the net income (computed without allowance for depletion) from the property upon which the discovery was made, except that in no case shall the depletion allowance be less than it would be if computed without reference to this provision."

COMMERCE YEARBOOK

AS an aid to business men, the Department of Commerce has begun the yearly publication of a Commerce Yearbook, which will review economic conditions in industries, with statistical and other data. The first issue covers 1922 and the early part of 1923 and gives considerable information on mining and mineral production.

ACCIDENT PREVENTION

THE Department of Labor reports that during the last ten years fatality rates have been reduced 50 percent, the frequency rate for injuries 44 percent, and the severity rate 34 percent in the iron and steel industry.

The recent industrial accident conference decided to ask the states of compile data on accidents in the metal products. The United States Bureau of Labor Statistics will compile statistics on accidents in the iron and steel industry and the Bureau of Mines on the mining industry.

STANDARDIZATION OF COAL MINE DRAINAGE FROM THE STANDPOINT OF THE OPERATOR

By J. H. EDWARDS*

TO whom do we refer when we speak of the "Operator"? Since the real problems of mine drainage generally involve the use of power driven pumps, three parties come to mind. First, the man actually tending the pumping installation; second, the man in charge of the power and mechanical department; and, third, the owner or owners of the mines. Let us analyze the standpoint of each. The pumpman desires that his duties include the minimum of physical effort and that his work be as clean and pleasant as possible. The power and mechanical superintendent strives to obtain installations which give little trouble and have a small maintenance cost. The owner or owners want reliable mine drainage at the least possible expense.

The relative standpoints of the power and mechanical superintendent, and of the mine operator should be identical and, therefore, we will define the "operator" as the party desiring to obtain the most reliable drainage possible with the least cost per ton of coal mined. This includes the consideration of depreciation on the original investment, the consideration of expense for operating labor and power supply; also the repair cost expense against which is chargeable the cost of keeping on hand a constant supply of spare parts.

The Standardization Committee of the American Mining Congress can accomplish the following for the operator: First, formulate a set of general rules based on practical experience and actual engineering tests, these rules to be followed as a guide in selecting the type of installation best suited to a given condition. As a brief example, these rules should set forth the ordinary limitations and advantages of the centrifugal and of the reciprocating types of mine pumps. Second, this committee can impress upon the operator the value of standardization by using in a mine or in a group of associated mines as few types and sizes of pumps and associated equipment as is consistent for economical operation. Also, this committee can tend to hold the manufacturer down to making less frequent minor changes in pumping equipment; discouraging the changes which are simply "sales talking points" but encouraging new designs which are based on the idea of obtaining the most reliable and efficient mine drainage at the least cost per ton.

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CURRENT OIL SHALE NOTES

WORK has been resumed on the plant of the Monarch Oil Shale Company at De Beque, Colo., and the entire plant is expected to be in operation by February 1, 1924. Additional equipment is being installed, consisting of oil tanks of 1,000-barrel capacity, a fractionation still, agitators for clarifying the oil, and a gasometer. The main products to be put on the market are a high test water white gasoline and flotation oil. The residual will be used as fuel under the fractionation still. The uncondensable gas from the shale is used under the Ginet retort.

Encouraging reports come from the Catlin plant at Elko, Nev. The plant is producing 26,000 gallons of oil a month and can be pronounced a decidedly commercial plant, the first in the United States.

The resurvey of oil shale land in the De Beque region is well advanced. Three townships have now been completed. The remaining area will probably be surveyed in the summer of 1924.

Interest is attached to two test cases now before the Glenwood Springs, Colo., office of the General Land Office. Large areas in western Colorado, eastern Utah, and southern Wyoming are underlain by shale. The question at issue is whether these tracts are essentially mineral land, valuable because of the oil shale, or simply agricultural land open to homesteading. The outcome will be watched with widespread interest.

The use of oil as fuel on American railroads is steadily increasing. The following roads are now using, partially or exclusively, oil-burning locomotives: Atchison, Topeka & Santa Fe; Great Northern; Northern Pacific; Southern Pacific; Kansas City Southern; Florida East Coast; International Great Northern; Texas & Pacific; Chicago & Northwestern; Chicago, Milwaukee & St. Paul; Western Pacific; St. Louis & San Francisco; Chicago, Rock Island & Pacific; Missouri, Kansas & Texas. The Missouri Pacific has recently ordered 104 of its locomotives refitted for oil burning.

Brazilian "turfa," the oil shale of Brazil, is soft, brownish-yellow in color, and in weight is lighter than water. Test gives as much as 113 gallons of crude oil to the ton, with a specific gravity of 0.87. The shortage of coal and well oil in Brazil makes this deposit of great potential value as a source of crude oil.

An English company has secured a lease on the oil shale mines at Vanamoisa, Esthonia, formerly held by the state, and is erecting a retorting plant, built by Vickers, Ltd., to have an initial throughput of 50 tons a day. About two months will be needed in which to put the plant in operation.

The large deposits of torbanite, the original source of oil in England and Scotland, in the Ermelo district of South Africa are receiving marked attention. E. H. Cunningham-Craig, the noted English expert, is preparing a report which will show the extent and value of these deposits. Ronald Johnstone, of London, the expert oil shale engineer of London, is preparing plans and estimates of cost for a commercial plant. Practical tests indicate commercial success, chiefly because torbanite is the richest raw material from which oil can be derived. A test plant of the Lamplough-Harper type has been used on the torbanite with satisfactory results. From a ton of torbanite 150 gallons of crude oil were obtained.

The Fusion retort of England has been selected for use in Esthonia on the Esthonian shale. This retort is of the horizontal, rotary type, externally heated by gas. Within the retort is a free-moving tumbler, or breaker, which, as the retort revolves, is carried up on one side and then falls over and thus breaks up the shale during the process of distillation. This breaker device seems to make caking, gumming, and sticking impossible.

The high price of crude oil in Australia has brought about renewed interest in securing oil from shale. The Prime Minister has been appealed to for government aid in exploring the deposits and subsidizing an operating company. Statements made show that in certain areas a yield of 2,500 tons of shale to the acre can be expected, and that a retorting plant of 300 tons throughput a day can supply 30,000 gallons of oil a day for 100 years. The delay in developing the oil shale industry in Australia has been the lack of high-grade technical men to direct the work, no thorough investigation and test of the deposits themselves, and no retort adapted to the oil shale itself.

The increased use of oil as fuel is strongly emphasized by Henry L. Doherty in an address before the American Petroleum Institute. He shows that oil as fuel is worth 22.4 cents a gallon to the house owner in New York, and will give more satisfaction than coal. He claims that the demand for oil can be built up to such an extent that a price far beyond what it brings today can be obtained. He urges support, encouragement, and assistance to inventors and manufacturers of oil-burning apparatus and the widest possible use of oil as fuel.

MINE WATER AND ITS TREATMENT

By J. R. CAMPBELL* †

IN the fall of 1911, I discussed before the Engineers' Society of Western Pennsylvania a paper on "Acids in the Monongahela River," by Colonel Roberts. At that time I pointed out the possibilities of treating acid mine water and the recovery of by-products therefrom, but little did I think then of the wide attention that is now being given to the problem by legislative, governmental and corporate bodies as well as individuals. Since that time, over ten years ago, we have had considerable experience with these waters and also have had occasion to discuss various papers on the subject by different writers, to which I will refer to avoid repetition of certain phases pertaining to the chemistry of the problem.

We have in mind our discussions on L. D. Tracy's paper on "The Calumet Neutralization Plant" of the H. C. Frick Coke Company and H. N. Eavenson's paper on "Run-off and Mine Drainage" before the February, 1921, meeting of the American Institute of Mining and Metallurgical Engineers; also, Dr. A. R. Powell's paper on "Sulfur in Coal and Coke" before the Engineers' Society in October, 1920. I believe that all of these papers and discussions have been printed, and they are referred to because they go somewhat into the details of the chemistry of acid mine water. For the purposes of this paper it will be sufficient to say that in speaking of mine water, acid mine water drainage is meant in all cases, as this is the kind of mine water that is generally found in the Pittsburgh district and is the cause of most of the trouble in pollution problems. Yet there are instances in which alkaline mine water is found for a long time in mines of certain districts, due, perhaps, to the high alkalinity of the natural waters percolating into the mine from the superimposed strata. We have not made a very careful investigation into this phase of mine water, but from what we have found out about certain "ring" waters in the shafts, the highly charged limestone waters from the surface have filtered through a bed of natural alkaline silicates (Permutit) changing the calcium salts to sodium salts, and thus giving rise to the presence of copious quantities of sodium sulfate in these alkaline mine waters.

Instances of such waters from our own mines are given below:

	Grains per U. S. gal.	
	Hoist shaft 10/6/09	Air shaft 6/14/10
NaCl	.924	.424
Na_2SO_4	5.831	4.143
Na_2CO_3	9.121	7.198
$CaCO_3$	5.581	3.988
$MgCO_3$	1.670	1.876
SiO_2	.385	.875
$Fe_2O_3+Al_2O_3$ ...	.327	.391
Total minerals.	23.839	18.894
Organic & vol. matter	5.086	not done
Total solids...	28.925	

It is assumed that carbonates are present as bi-carbonates.

OXIDATION OF PYRITE CAUSES ACIDITY

Passing again to the main subject—acid mine drainage—we look for the cause of this condition, the oxidation of the pyrite (FeS_2) in the coal, which may be considered to proceed about as follows:

(1) $FeS_2+H_2O+7O=FeSO_4+H_2SO_4$
(2) $2FeSO_4+H_2SO_4+O=Fe_2(SO_4)_3+H_2O$
(3) $6FeSO_4+3O+3H_2O=2Fe_2(SO_4)_3+Fe_2(OH)_6$
(4) $Fe_2(SO_4)_3+6H_2O=2Fe(OH)_3+3H_2SO_4$

Referring to the chemical reactions shown above, we may say that reactions (1) and (2) are very unstable and incomplete. Mine water of the character shown by either is rarely found to exist for any great length of time. Reaction (1) refers to what the miners call "white sulphur" water, but it soon changes to red sulphur" water on its exposure to the atmosphere. Reactions (3) and (4) seem to cover the conditions found in mine water very well, except that intermediate products are almost invariably found, as evidenced by the examination of the natural deposit from mine water, commonly called "sulphur mud." In some of the papers referred to before we have shown the character and given detailed analyses of this material so that no further discussion is needed here. It is sufficient to say that the iron salts are present in sulphur mud, approximately as follows:

$Fe_2(SO_4)_3=24.07\%$
$Fe_2(OH)_6=71.95$

which represents an intermediate step between reactions (3) and (4). If the oxidation and hydrolysis of the ferric sulfate is complete, there is, of course, only ferric hydrate and free sulphuric acid present in mine water; then ferric hydrate would be precipitated. On the other hand, if reaction (3) is carried out a true basic ferric sulfate is formed which has the following composition:

$Fe_2(SO_4)_3=78.9\%$
$Fe_2(OH)_6=21.1$

From the above brief discussion of the chemical reactions involved in the formation of acid mine drainage, it will be readily deduced that such a water must necessarily be a sulfate water in every sense of the word. We have selected a couple of typical analyses of raw mine water from the Calumet mine of the H. C. Frick Coke Company, where the neutralization plant is located:

	Grains per U. S. gal.	
	12/28/20	1/25/21
NaCl	5.78	3.84
Na_2SO_4	28.36	15.11
$CaSO_4$	39.61	39.61
$MgSO_4$	18.29	23.96
$Al_2(SO_4)_3$	3.92	15.61
Fe_2SO_4	3.15	3.15
$Fe_2(SO_4)_3$	67.85	60.09
$Fe_2(OH)_6$	26.13	26.70
H_2SO_4 (free)	14.20	16.01
SiO_2	not done	.58
Total apparent acidity (H_2SO_4)	73.13	83.99
Free acidity (H_2SO_4)	14.20	16.01

We would like to call attention to an important factor in the above analyses, which is the total apparent acidity, nearly always overlooked in making an examination of mine water, or sources of supply polluted with it. This determination is reported in terms of H_2SO_4 and represents the salts in the mine water decomposable with a caustic alkali, using phenolphthleine as an indicator. We make this determination on raw mine water in the cold, using from 50cc to 100cc for a sample and titrate with N/10 NaOH. On river or other water polluted with mine drainage we use ten times this amount for a sample, adding 3cc of N/10 H_2SO_4 as a precautionary measure for breaking up the carbonates completely, boil five minutes, cool and titrate as in the case of raw mine water. We find that this method of procedure is one entirely to be relied on and have used it successfully for over 15 years in our examination of waters polluted with mine drainage which have to be treated for boiler purposes. In other words, the point I wish to make is, that it is the total apparent acidity, not the free acid, that is the most important factor in waters of this character.

The free acid is a variable percentage of the total apparent acidity. In the cases cited above it will be noted that it is about 20 percent, but it may go higher, even to 30 percent or 40 percent. This determination is made by the simple titration of a definite quantity of mine water (usually about 100cc) with a standard solution of N/10 NaOH, using methyl orange as an indicator. It is a somewhat difficult determination to make on account of the obscure end point but we usually accomplish it fairly well by

* H. C. Frick Coke Company.
† *Courtesy of Coal Mine Management.*

using a high dilution of the sample with distilled water. We understand there are other methods that may be employed to good advantage, for instance, one developed by Mr. Rankin, a chemist of the Phelps-Dodge Corporation.

Paradoxical as it may seem, a sample of water polluted with acid mine drainage may show a somewhat high alkalinity with methyl orange and still be acid according to the total apparent acidity test described above. Authorities say that iron salts do not affect methyl orange as an indicator, for which reason it is employed, but if we examine the character of the mine water as represented by reactions (3) and (4), however, we can see a possible reason for the alkaline reaction of polluted waters to methyl orange when in reality they may have an acid reaction in boilers. In titrating such waters, carrying in suspension considerable quantities of ferric hydrate, there would be a reaction between the ferric hydrate and the N/10 H_2SO_4 until the end point had been reached, thus indicating a false alkalinity if the ferric hydrate is accompanied by its usual running mate, "Old Mr. $Fe_2(SO_4)_3$," whose particular dish is pipe lines and boilers when subjected to any agencies causing decomposition, like heat and oxidation. I realize that this may be somewhat beyond the scope of this paper, but I could not resist the temptation to point out this bit of chemistry on account of its rather wide ramifications.

On account of the unstable character of mine water, we make all our approximate determinations in the field, using a portable chemical kit for the purpose. This is not difficult as the determinations can be made in the cold.

Can Mine Water Be Made Potable?

This brings us to the second part of the subject, the treatment of mine water. We realize that a great deal has been written and said on this subject lately, some of it more or less nonsensical judging from the newspaper accounts very frequently seen. The Calumet neutralization plant erected in the fall of 1915 has been more or less a Mecca for strangers from a foreign and a domestic strand. We are not going into a detailed description of the plant, as Mr. Tracy in his paper has covered it sufficiently well, but we do wish to take this opportunity of saying what can be done and what cannot be done in the way of mine water rectification. Somehow or other a good many people have the idea that it is a very simple matter to restore mine water to its pristine quality. This is very erroneous, for so far as I know no commercial process has been developed for making this water potable and fit for all domestic uses. Our work has been along industrial lines and has had just the measure of success we expected from it.

Going back to reactions (3) and (4) again, we find that the simplest treatment that can be given to mine water is one for the neutralization of free sulphuric acid and possibly further decomposition of the ferric sulfate in (3). Logically, this simple treatment would render the water neutral to methyl orange and cause a precipitation of the iron salts previously held partly in solution and in suspension. Actually, this is what does occur by the addition of a simple neutralizing agent. In the case of the Calumet neutralization plant we use powdered limestone prepared on a Fuller Lehigh mill, but any alkali or alkali-earth material may be used. Two typical analyses taken from the influent to the Dorr thickener to show the character of the treated water are as follows:

	Grains per U. S. gallon	
	12/28/20	1/28/21
$NaCl$	3.84	2.69
Na_2SO_4	20.19	15.57
$CaSO_4$	96.20	87.74
$MgSO_4$	26.44	28.97
$Al_2(SO_4)_3$	36.83	13.43
$Al_2(OH)_6$	16.80 ($FeSO_4$)	3.15
$Fe(OH)_3$	2.80 ($Fe_2(SO_4)_3$)	45.20
$Fe_2(OH)_6$	46.80 ($Fe_2(OH)_6$)	35.90
SiO_2	not done	8.16
Total apparent acidity (H_2SO_4)	27.42	58.56
Free acidity (H_2SO_4)	neutral	neutral

Referring to the analyses above, the influent on December 28, 1920, was considerably overdosed with powdered limestone, having a tendency to decompose the ferric and aluminum sulfates and thereby making for a low total apparent acidity. Such treatment would produce a water quite neutral to methyl orange and filter clear and sparkling on a mechanical sand filter. It would serve ideally for cooling and quenching purposes around a coke plant, but for no other purpose, like boiler feed, without additional treatment on account of the hardness. The iron hydrate precipitate recovered from water so treated would probably be very high in lime salts.

The influent taken on January 25, 1921, shows that the water had been barely neutralized with the powdered limestone with only a partial decomposition of the ferric sulfate. In this case the character of the precipitate is about the same as the natural deposit from mine water. It is such a product that we aim to produce at the Calumet plant, and it is sold for gas purification purposes. We will discuss that more in detail later.

Treated Water Is Hard

We have already pointed out the character of the water so treated, which is high in calcium and magnesium sulfates. The solubility of calcium sulfate is slightly over 100 grains per U. S. gallon, which agrees with the actual condition in the treated water. Since this water can be made clear and sparkling by its primary treatment, it remains to remove its hardness if the water is to be used for boiler purposes. We have done this in one or two cases of drought, simply treating it further with soda ash. Such treatment renders the water very high in sodium sulfate and it has a tendency to foam and prime in the boilers. We get by by having plenty of boiler capacity and working under a light load. It is needless to say that treatment of such water is expensive and probably prohibitive except in cases of emergencies. The sulfates may be removed almost entirely by the use of barium carbonate instead of sodium carbonate. We have done some work along this line and figure that such a process is feasible only when it is put on a by product basis. The water so treated would be entirely suitable for boiler purposes but probably not for domestic or drinking purposes on account of the poisonous character of the barium salts. Some research work is now being done along this line, I believe, and the consensus of opinion to date seems to be that it is not a success. The action of the barium carbonate on calcium sulfate is to form an insoluble precipitate composed of calcium carbonate and barium sulfate which may be recovered and separated if necessary. The calcium carbonate could be re-used for the neutralization of the raw mine water and the barium sulfate sold as a paint pigment or some other purpose. These processes are covered and described in the various patents held by the H. C. Frick Coke Company on mine water treatment.

By Products from Water Treatment

We now come to the third phase of the subject, the recovery of by-products from mine water in conjunction with its rectification. Frankly, when we started the Calumet Neutralization Plant, we had no well-defined plans along this line, although we recognized the fact that certain valuable by-products were obtainable. This plant was built primarily for the rectification of mine water sufficiently to permit its use in "watering

out" coke ovens in times of drought in this particular district; consequently, no by-product apparatus was installed at that time, but it has since been evolved. We first tried the use of centrifugals for dehydration of the sludge or underflow from the Dorr thickener. This was a failure. Then we tried rotary vacuum drum driers for drying the product, but they did not work out satisfactorily on account of making the product lumpy.

The by-product idea was hastened by the World War which was then on. Imports of gas purifying material were cut off and we saw a chance to use the little Calumet plant as a "war baby," producing a precipitated hydrated oxide of iron for the removal of H_2S from illuminating gases. We found no difficulty in marketing the material at a price that would partially offset at least the cost of neutralizing the water. The plant has been operating continuously ever since, whether the water is needed or not, but it has not proven highly profitable in dollars and cents, regardless of what stories may have been circulated to the contrary. The best that can be said about it is that it is on a partly self-sustaining basis. The Calumet plant, however, is only an experimental one and should not be taken as a criterion of what can be done on a commercial scale.

Lately the foreign article has commenced to come into this country again in competition with domestic oxides, including our own. A strong effort is being made by the producers of by-products in certain lines to protect their products (and rightfully so), but, so far as I know, no concerted effort is being made for the protection of domestic hydrated oxides.

We think it is entirely fair to compare with the foreign material precipitated oxide from mine water, as shown by the following Kunberger fouling tests:

KUNBERGER FOULING TESTS

	Imported oxid, 5/25/20		Frick, 8/19/20	
	Dry	Wet	Dry	Wet
Moisture		9.98%		17.00%
Iron oxide	53.14%		41.00%	
1st fouling		26.76		26.12
2nd fouling		25.80		26.02
3rd fouling		25.34		25.42
4th fouling		24.08		24.26
5th fouling		22.05		23.06
6th fouling		19.84		22.27
7th fouling				20.17
8th fouling				17.02
9th fouling				15.74
10th fouling				19.92

On referring to the fouling tests, it will be noted that the precipitated oxide from mine water compares very favorably with the imported oxide. The material precipitated from mine water is marketed on a 20% moisture basis, but I understand that the foreign article comes into this country much wetter, running about 30%. The sample on which the Kunberger test was made had been partially dried out.

The most important problems involved in the manufacture and selection of a satisfactory mine pump, outside of its simplicity of design and efficiency, are the physical and resistive properties of the metals used, for the reason that a mine pump is subjected to more severe conditions than an ordinary pump above surface, and also because of the extremely bad water which, in the majority of cases, such a pump has to handle. Consequently the author has gone carefully into this matter to ascertain relative values.

A comparative test between precipitated oxide and the old-time iron borings oxide, the first oxide developed for the purification of gas and which took the place of limes purification, is shown as follows:

COMPARATIVE TEST ON PRECIPITATED OXIDE FROM MINE WATER AND IRON BORINGS

Third fouling, 4/7/20

Mixture	Precipitated Oxide 25 lbs. of ore per bu.	Iron Borings 22½ lbs. of iron per bu.
No. bu. in lot	6	6
Total gas purified	68,300 cubic feet	33,100 cubic feet
Ave. rate of gas per minute	2.6 cubic feet	2.3 cubic feet
Gas purified per bu. this run	11,383 cubic feet	5,517 cubic feet
Gas purified on 2nd test per bu.	40,716 cubic feet	29,633 cubic feet
Gas purified on 1st test per bu.	27,217 cubic feet	21,450 cubic feet
Total gas purified per bu.	79,316 cubic feet	56,600 cubic feet
Ave. grains of H_2S in crude gas	120 grains	120 grains
Ave. grains of H_2S in purified gas	000 grains	000 grains
3rd fouling started	3/18/20	3/18/20
3rd fouling finished	4/5/20	3/28/20

The above comparative test showed the precipitated oxide from mine water to be about 40% more efficient than the old iron borings oxide. We say this without any discredit to iron borings oxide which has had a long and useful career for the purpose, but we figure that the use of precipitated oxides must necessarily displace the older type of purification in the present search for greater efficiency. The precipitated oxide revivifies much more quickly and we see no reason why mechanical means cannot be developed for successful revivification in situ.

Another comparative test is shown below, illustrating the difference between the laboratory tests, or the Kunberger method, and some practical tests on a small scale.

Kunberger Tests		Box Tests	
Sample	% H_2S absorbed	Sample	Efficiency
M	107.4	B	95.2
H	85.5	A	92.6
K	69.9	M	91.4
E	60.5	E	90.5
B	60.1	G	89.3
L	55.0	C	86.8
G	53.4	L	86.4
F	42.7	D	81.0
P	40.9	F	77.8
D	38.3	I	77.0
C	31.6	K	74.7
I	28.2	H	73.7
A	25.4	P	54.4

In the tabulation shown on box efficiency, sample "B" is precipitated oxide from mine water and heads the list in efficiency, being 95.2%, but it stands fifth in the list on the Kunberger test, being 60.1% on three foulings. This test shows that there may be certain other oxides that will show up better in the laboratory but not so well in actual use on account of lack of activity.

In addition to the use of the precipitate from mine water for gas purification, it has other possible uses, for instance, when properly prepared and calcined, it may be ground into a very valuable Venetian red paint pigment, the market for which, of course, is rather limited. A still wider use, perhaps, than that for gas purification, is its possible use for a fertilizer or soil corrective. Some work has been done along this line and the results are encouraging but not conclusive.

Finally, there is no panacea, so far as we know, for the complete and commercial rectification of mine water, despite the claims of inventors in the Pittsburgh and Ohio districts who have been exhibiting their processes before mining men and legislative bodies. It is comparatively easy, it is true, to neutralize the free acid and precipitate the burden of the iron salts and thereby discharge a fair looking water into the adjacent streams, but whether fish will live in them or whether such purified mine discharge will not make the fresh water of the stream too hard for ordinary domestic and industrial uses is a

debatable question. We feel that we have taken a long step in advance in solving the mine water problem, but it is too premature to have legislative and governmental bodies make it mandatory to purify this industrial waste from mines before discharging it into the streams and rivers without imposing too great a burden on the coal operator. We believe, however, that, if left alone to work out their problem in their own way, the coal operators and mining men may partially solve this vexatious problem to the satisfaction of all interested parties—at least we are very hopeful. You know, "Hope springs eternal in the human breast."

STANDARDIZATION OF MINE DRAINAGE

From the
Viewpoint of the Engineer

By. JOHN W. HALLOCK*

THE position of the engineer in the present movement toward standardization in mine drainage is about that of a doctor or a lawyer. The doctor bases his treatment on an understanding of the symptoms and a knowledge of appropriate remedial measures. Diagnosis and prescription involve a knowledge of cause and effect. Recommendations of an engineer in mine drainage problems should be based on a similar knowledge of the needs of drainage and possible remedies.

Clinics, consultations, and frequent exchange of ideas have reduced medical and surgical treatments to a surprisingly high standard of efficiency. Doctors and surgeons the world over vie with one another in giving to the world the benefits of their discoveries. Engineers have in the past been loath to benefit from the experience of other engineers. They might even be said to have in the past consistently *opposed* reducing certain practices in their profession to the basis of working standards.

Even a hasty review of standardization in all lines of industry reveals wonders. Our amazing quantity production of automobiles, the growth of our telephone service, the efficiency of our American railroads will show the benefits resulting from accepting and adopting standard equipment and standard methods of procedure. Maximum efficiency in mine drainage can likewise come only from standardization of equipment and practice.

There are three parties to the problem of mine drainage—the mining industry, manufacturers of mine drainage equipment and consulting engineers whose practices touch on the work of either of the other two. The mining industries are freely seeking standardization; manufacturers of mine drainage equipment are anxious to have some standards established but the engineers are apparently not rising to the emergency. It is the province of the engineer to assist in solving this problem, the solution of which will mean much to the three parties at interest. Higher and more uniform production of coal, less frequent costly flooding of mines, more stabilized production among manufacturers of mine drainage equipment and consequent lower prices all along the line are certainly results worth striving for.

It is to be confidently hoped that right-thinking engineers, the country over will rally to this work of the standardization conference of the American Mining Congress and will take as their slogan, that of the army engineers during the World War—"It can't be done—but here it is!"

* Professor and Head, Dept. of Industrial Engineering, University of Pittsburgh.

STATUS OF WAR MINERAL CLAIMS

THROUGH rearrangement of the work of the War Minerals Relief Commission by the Secretary of Interior Work, an annual saving of $24,670 has been effected, and settlement of claims is expected to be completed in the near future.

The new plan for handling the work was made last May, and since then the force working on war mineral claims has been reduced from 19 to 11 employes. Action on claims has also been expedited, the number of cases passed upon by the Secretary since May 1 being 357, or a monthly average of 51. During the year 1922, only 293 cases were disposed of, an average per month of 24.

Covering the year ending November 30, 1923, the Secretary passed upon 494 claims and made allowances totaling $1,144,681.91. The amount asked by these claimants was $7,082,170.25.

Claimants are allowed 30 days after receipt of notice of action by the Secretary in which to file exceptions to the findings. Of the 494 claims passed upon, appeals have been made on 11, which are now pending.

At the present time there remains for adjudication 204 open or live claims; that is, claims which have been prosecuted with more or less diligence and which are entitled to consideration. The amount asked in these claims is $3,333,341.33. The remainder of the appropriation at the present time is $1,876,333.59.

LEGISLATION REVIEW

(*Continued from page* 23)

Committee on Immigration. This bill proposes to limit the immigration of aliens into the United States and to provide a system of selection of immigrants. Its provisions embrace the following: immigration certificates from the port of embarkation; admission above the quota law of highly skilled laborers if labor of like kind unemployed can not be found in the United States, to be determined by the Secretary of Labor on application of the interested party; reducing the number to be admitted from 3 percent to 2 percent of the foreign born in the United States in 1890; deportation of aliens, and penalties for illegal transportation of aliens.

S. 35. Introduced by Mr. Lodge (Rep., Mass.). Referred to the Committee on Immigration. This is similar to the bill introduced in the House by Mr. Johnson.

H. R. 539. Introduced by Mr. Phillips (Rep., Pa.). Referred to the committee on Immigration. This provides for the admission of not more than 500,000 aliens during any year.

H. R. 3197. Introduced by Mr. Steagall (Dem., Ala.). Referred to the Committee on Immigration. It proposes to suspend immigration to the United States until January 1, 1934.

H. R. 461. Introduced by Mr. Sabath (Dem., Ill.). Referred to the Committee on Immigration. It proposes to limit the immigration of aliens into the United States.

H. R. 622. Introduced by Mr. Pearlman (Rep., N. Y.). Referred to the same committee. It proposes repeal of the immigration restriction act.

H. R. 5. Introduced by Mr. Raker (Dem., Calif.). Referred to the Committee on Immigration. It proposes to limit immigration of aliens into the United States.

CHILD LABOR

Bills proposing constitutional amendments to prohibit child labor, some prescribing a minimum of 18 years and others 21 years, and also limiting employment of women, which would apply to mines and factories and prescribe the conditions of their labor, were introduced and referred to the Judiciary Committee. Some of them reserve to the states the power to limit child labor. These bills follow:

H. J. Res. 11, by Mr. Hayden (Dem., Ariz.); H. J. Res. 32, by Mr. Rogers (Rep., Mass.); H. J. Res. 4, by Mr. Johnson (Rep., Wash.); S. J. Res. 19, by Mr. McCormick (Rep., Ill.); H. J. Res. 21, by Mr. Dallinger (Rep., Mass.); H. J. Res. 42, by Mr. Pearlman (Rep., N. Y.); H. J. Res. 7, by Mr. Fitzgerald (Rep., Ohio); H. J. Res. 15 and 16, by Mr. Raker (Dem., Calif.); H. J. Res. 64, by Mr. Frothingham (Rep., Mass.); H. J. Res. 66, by Mr. Foster (Rep., Ohio); S. J. Res. 1, by Mr. Shortridge (Rep., Calif.); H. J. Res. 199, by Mr. Connery (Dem., Mass.); H. J. Res. 23, by Mr. Moore (Rep., Ohio); H. J. Res. 45, by Mr. Cooper (Rep., Wis.); S. J. Res. 35, by Mr. Wheeler (Dem., Mont.); S. J. Res. 87, by Mr. Lineberger (Rep., Calif.); H. J. Res. 90, by Mr. Lozier (Dem., Mo.); H. J. Res. 83, by Mr. Greene (Rep., Mass.).

METALS USED IN MINE PUMPS

The Relative Value of Their Resistive Properties

By G. A. DRYSDALE,
*Metallurgical Engineer**

IN considering cast metals, as a whole, but more especially acid resisting metals, they must form a perfect alloy giving a very dense structure, free from a tendency toward segregation on cooling, that pours well, does not form excessive oxidation in the melting, does not burn the sand in pouring, takes a good impression of the mold, has a normal shrinkage, and the castings easily cleanable.

The physical and resistive properties are almost entirely controlled by the methods employed and conditions under which such metals or alloys are produced. That is, whether they are rolled and drawn, drop forged or cast. In any of these cases, the product varies in structure and consequently in strength and resistance to penetration, though the constituents of the alloys are the same; for example, all the metals and alloys that can be rolled and drawn or drop forged are more highly resistant to the attack of corrosion and erosion of mine water than similar metals and alloys when cast. In the first instance the structure of the metal is designated as dense or fibrous and uniform, and in the latter, granular and ofttimes crystalline and irregular. This latter condition can be overcome to a great degree by casting under pressure, but this materially adds to the cost of the same, and from a foundry standpoint is ofttimes unpracticable. It is also for this reason that metals and alloys which are not classed as acid resisting, but give a very close uniform structure, often give more satisfactory results in a mine than highly acid resisting metals or alloys which have a tendency toward segregation and crystallization, thus permitting free access to penetration and consequently are more easily attacked by corrosion.

As an example of the vast difference in the physical and resistive properties under such conditions, we note two samples of a copper base alloy with nickel and zinc in exactly the same proportions. The sample designated as A was rolled and drawn, B was cast in the usual way, giving the following physical properties:

	Yield point Lbs. per sq. in.	Tensile strength Lbs. per sq. in.
A	52,500	70,750
B	.....	30,850
	Elongation in 2"	**Reduction in area**
A	15.50	25.81
B	2.50	.....

These two samples were machined down so as to give the same surface exposure and placed in running mine water for corrosion test covering a period of 90 days, with the following results:

Sample marked A lost 3.15 percent.
Sample marked B lost 12.70 percent.

These conditions have been noted in a number of alloys of different composition, with similar results.

The following table gives the comparative resistive properties of a few of the metals and alloys most used for mine pumps, and also a comparison of the same when rolled and drawn, and when cast according to the usual method of procedure in the average brass foundry without the use of heavy risers, etc. The surface exposure of these samples was approximately the same, and the test was made in running mine water, giving an analysis, which follows:

Free acid as sulphuric, 71.4 grains per gallon.

Mineral matter, total solids, 467 grains per gallon.

Description of metal or alloy	Base	No. of days immersed	% Loss
"Meco" (rolled and drawn)	Copper	30	1.65
"Meco," cast	Copper	30	3.73
"Monel" (rolled and drawn)	Nickel	30	.95
"Monel," cast	Nickel	30	3.20
Brass (rolled and drawn)	Copper	30	1.75
Brass, cast	Copper	30	5.20
Bronze (A), (rolled and drawn)	Copper	30	1.38
Bronze, cast	Copper	30	4.75
Bronze (B), (rolled and drawn)	Copper	30	1.80
Bronze, cast	Copper	30	5.60
M-3 metal, cast	Lead	30	.13
14% silicon iron, cast		30	.014
High chromium steel (rolled and drawn)		30	Nil
For comparison only—			
Cast iron (close grained)		30	22.42

It will be noted by the above list that the rolled and drawn high chromium steel and the cast lead base metal designated as M-3, also the cast high silicon iron are the most highly resistant to the action of this particular mine water, which is considered very hard to contend with. The other metals given in the list could not remain in serviceable condition in a pump for any reasonable period of time, and their use consequently involves heavy renewal expense.

In considering acid resisting metals or alloys in general, and more especially those which heretofore have been used for mine pumps, some of them cannot be rolled and drawn, and others cannot be successfully cast, with economy, and therefore their production becomes a very expensive problem. Consequently, up to the present time, no satisfactory mine pump has been made up of *one* acid resisting metal.

Owing to the extremely low physical properties of the cast high silicon iron, it cannot be considered a suitable metal for mine pumps.

The high physical properties obtained with the high-chrome steel, however, render it a very good metal for shafting, bolts, nuts, etc. This high-chrome steel, commonly called "stainless steel," is obtainable under various trade names, but of the number of samples of such metals received and tested by the author, very few of them are truly acid resisting. For this reason thorough tests must be made to determine the actual value of a specific brand of "stainless steel" before the same can be relied upon for use in mine pumps, or to resist the corrosive action of mine water.

The lead base alloys as a general rule have rather low physical properties, and the higher the lead content, the lower these physical properties will be, and vice versa. But lead base alloys can be made to give sufficiently high physical properties, and being a good foundry proposition, would be suitable for castings for a mine pump. Such a combination of a good lead base alloy and a suitable high-chrome steel has provided a very satisfactory mine pump.

As an insight into the varied results obtained in testing a number of brands of high-chromium steel, or "stainless steel," the following description of the tests and their results are given. The samples of five different brands of "stainless steel" were submitted to the author for test purposes, and the first test was to determine their resistive properties in mine water. To make these tests as uniform as possible, nuts of exactly the same size were obtained from the samples and used in exactly the same

* Midwest Engine Corporation.

manner, viz: to screw onto the shaft that holds the impeller in place in a 1-inch single suction centrifugal pump, which exposed the sample for a definite period of time to the mine water at the intake pipe, thus being subjected to the most vigorous corrosive and erosive action of the mine water.

Metal	Time of test	% Loss	Remarks
Stainless steel "A".....	9 days	15.676	
Stainless steel "A".....	27 days	55.335	Test discontinued
Stainless steel "B".....	21 days	.039	
Stainless steel "B".....	30 days	.024	
Stainless steel "B".....	30 days	.025	
Stainless steel "B".....	30 days	Nil	
Total.....	111 days	.088	
Stainless steel "C".....	30 days	.049	
Stainless steel "C".....	30 days	.046	
Total.....	60 days	.095	
Stainless steel "D".....	10 days	.467	
Stainless steel "D".....	30 days	1.915	
Total.....	40 days	2.382	
Stainless steel "E".....	10 days	.231	
Stainless steel "E".....	30 days	1.191	
Total.....	40 days	1.422	
Tobin bronze (rolled).....	26 days	47.371	Test discontinued
Tool steel (18% tungsten).	16 days	42.516	Test discontinued
M-3 metal (cast).....	10 days	.458	
M-3 metal	30 days	.897	
Total.....	40 days	1.355	

The "stainless" steels designated as B and C demonstrate that they are highly resistant to the erosive and corrosive action of mine water. Samples D and E were not so highly resistant in this instance, and sample designated as A was a complete failure for such a purpose. The high-speed tool steel (18 percent tungsten) and the Tobin bronze were used for the purpose of comparison; and the lead base, cast metal M-3 was used as a comparison of high acid resisting properties.

Samples of these five different brands of "stainless" steel were obtained in the form of discs, of approximately the same weight and surface exposure, and immersed for definite periods of time at a room temperature in 1 percent, 10 percent and 30 percent solutions of sulphuric acid, with the following results:

Sample B stood up best in the 1 percent and 10 percent solutions, but was badly attacked in the 30 percent solution; sample A stood up best in the 30 percent solution; sample C was badly attacked in the 1 percent solution and readily dissolved in the 10 percent and 30 percent solutions. Sample D stood up fairly well in the 10 percent and 30 percent solutions but not so well in the 1 percent solution; sample E was readily attacked in the 1 percent solution and badly attacked in both the 10 percent and 30 percent acid solutions.

It will be noted that sample C, although highly resistant to the action of the mine water, was badly attacked in the acid solutions, and the sample A, although readily attacked in the mine water, was quite resistant to the acid solutions.

To further elaborate on the relative resistive properties of alloys used in mine pumps, a trial pump was built up (1-inch single suction, centrifugal), the castings made of the lead base alloy M-3, and the shafts, bolts and nuts made of the high chrome steel. Three impellers were cast for this pump as follows: A, copper base alloy (copper 90 percent, tin 10 percent); B, nickel base alloy (monel metal); C, lead base alloy (this is one of the author's own compositions; castings made of this lead base alloy have approximately the same physical properties as grey cast iron). These impellers were carefully weighed and used in the trial pump, covering three periods of 30 days each, handling what is considered a very bad mine water.

	Alloy	% Loss
1st Period	Copper base	1.418
	Nickel base	1.274
	Lead base	.354
2d Period	Copper base	2.256
	Nickel base	2.107
	Lead base	.830
3d Period	Copper base	13.521
	Nickel base	9.061
	Lead base	.478
Total	Copper base	17.195
	Nickel base	12.352
	Lead base	1.662

A number of bronzes containing lead in different amounts are made use of quite extensively in making castings for mine pumps. Such alloys, however, when carrying large percentages of lead (from 15 to 25 percent) cause more or less difficulty in the melting and casting, owing to segregation, which is a very detrimental factor in dealing with non-ferrous metals.

Lead lined cast iron mine pumps are used to handle acidulous mine water, but more or less trouble has been experienced in that line by the water seeping through small flaws in the lead lining and attacking the cast iron casing.

Zinc should never be used in any alloy for such purposes, especially in the cast form, owing to the fact that any minute particles of free zinc which readily segregate are instantly attacked by mine water. For this reason the copper base and nickel base alloys which do not contain any zinc in their composition are more satisfactory than the alloys which do include zinc. The detrimental effect of free zinc is not so apparent in the laboratory test, where the metal is immersed in still solutions and subjected only to corrosion, but it shows up very materially in the practical test where the metal is subjected to the actual working conditions of a mine pump and to the two destructive agencies, corrosion and erosion.

The resistive values of metals, taking into consideration those which have been discussed herein and other similar tests which the author has conducted, can be summed up as follows: Those metals which are highly resistant to the action of acidulous mine water:

In cast form: Lead base alloys (of certain combination). High silicon iron (having a limited field owing to low physical properties).

Metal	% H_2SO_4	Time	% Loss	Remarks
Stainless steel "A"...	1%	10 da.	.489	No apparent action
Stainless steel "B"...	1%	10 da.	.017	No apparent action
Stainless steel "C"...	1%	10 da.	33.342	Slight action at once
Stainless steel "D"...	1%	10 da.	1.344	No apparent action
Stainless steel "E"...	1%	10 da.	2.477	Slight action at once
Tobin bronze	1%	10 da.	.417	No apparent action
H. S. tool steel.....	1%	10 da.	6.034	Slight action in 2 hrs.
Stainless steel "A"...	10%	10 da.	.480	No apparent action
Stainless steel "B"...	10%	10 da.	.006	No apparent action
Stainless steel "C"...	10%	48 hrs.	100.000	Dissolved completely
Stainless steel "D"...	10%	10 da.	.781	No apparent action
Stainless steel "E"...	10%	10 da.	27.311	Vigorous action at once
Tobin bronze	10%	10 da.	.271	No apparent action
H. S. tool steel.....	10%	10 da.	10.173	Action at once
Stainless steel "A"...	30%	10 da.	.229	No apparent action
Stainless steel "B"...	30%	1 hr.	1.933	Taken out after 1 hr.
Stainless steel "C"...	30%	5 min.	100.000	Dissolved in 5 min.
Stainless steel "D"...	30%	10 da.	.442	No apparent action
Stainless steel "E"...	30%	10 da.	25.392	Very vigorous action
Tobin bronze	30%	10 da.	.035	No apparent action
H. S. tool steel.....	30%	10 da.	20.829	Vigorous action at once

Rolled and drawn: Specified brands of high-chrome steel.

Those metals which are not as highly resistant as the former, but are used to a great extent in the manufacture of pumps and accessories to handle acidulous water:

In cast form: Leaded bronzes, bronze (not containing zinc), aluminum alloys.
Rolled and drawn: Monel metal, bronze.

Metals which are not suitable for drainage equipment handling acidulous water:

In cast form: Grey iron, malleable iron, cast steel. Brass, or bronze containing zinc. German silver (any combination of copper, nickel and zinc).
Rolled and drawn: Carbon and alloy steels other than the satisfactory high-chrome steels mentioned.

Taking into consideration the facts and comparisons given, it is apparent that great care must be exercised in the selection of the metals used in the manufacture of a mine pump before the same can be considered satisfactory to stand up for a reasonable period of time against the destructive agencies present in mine water.

INDUSTRIAL PROSPERITY SEEMS ASSURED

Commerce Secretary Finds Slump Still Apparent Only In Agriculture—Report Outlines Views On Railway Situation

COMPLETE recovery from the great slump of 1921 in all branches of industry save agriculture is reported by Secretary of Commerce Herbert Hoover in his annual report for the fiscal year ended June 30, 1923. He states that even in agriculture there was some improvement. According to the report, this recovery found a special impetus in the activity of building, railway and other types of construction, resulting from postponement during the war.

"The best measure of economic prosperity in industries other than agriculture," says the report, "is the volume of production and transportation. In these industries large production followed from active demand and may readily be coincident with advancing prices." In this connection it is stated that "the increase in the activity of those industries which manufacture chiefly articles entering into construction, a demand for which is always peculiarly affected by waves of depression and prosperity, is especially conspicuous. Pig iron production, for example, during the fiscal year was nearly double that of 1921-22 and at a rate of three and one-half times greater than at the bottom of the slump in 1921."

Improvement in Agriculture

A considerable portion of the report is given to agricultural problems. It is stated that the situation in certain branches of agriculture continues unsatisfactory, though in most instances with distinctive improvement. It is made clear that by no means all branches of agriculture are suffering. "Unlike manufacturing and mining products," says the report, "both changes in volume of production on farms often do not reflect parallel cases in the prosperity of the agricultural community."

Coal

With respect to the coal situation, the report states, "the beginning of the fiscal year under review found the nation in the midst of its largest and most far-reaching coal strike." The measures taken by the Department to secure adequate stocks of coal throughout the country before the beginning of the strike on April 1, 1922, brought about the accumulation of from 75 million to 80 million tons, the largest stock in our history. The result was that the commerce and industry of the country was the same during the prolonged strike of five months.

"After the strike the accumulated demands and lack of transportation made it necessary to organize distribution in order to insure consumers against local shortages and extortionate prices." After reviewing the various efforts of the Federal Government to secure relief, the statement concludes that "the results of these activities may be summed up in the fact that the price of spot bituminous coal at the mines during the entire period from April 1, 1922, to January 1, 1923, averaged $4.15 against $6.60 in the same month of 1920, when very much less of an actual shortage existed."

The Railway Situation

The views of Secretary Hoover on the railway situation are outlined in the following extract from the report: "The past year's experience of the Department in its relations to transportation has shown even more emphatically than ever before the necessity for the consolidation of the railways into larger systems under private ownership, the principles of which were established in the Transportation Act of 1920. The difficulties of reorganizing the rate structure so as to secure simplification and to give relief to primary products—agriculture, coal, etc.—by a bare burden upon finished and l. c. l. goods are almost insuperable until the different systems are possessed of more diversified traffic and until the weaker roads have been absorbed.

"The necessity to establish railway credit and finance on a broader foundation and sole reliance upon the issue of mortgage securities; the necessity of provision for common utilization of chemical and other facilities; the impossibility of providing adequate rolling stock, and particularly specialized cars so long as the greatest falls solely upon the strong roads; the difficulties of more definite control of car service, of seasonal demands, of routing; the insuperable problems of equalization in car interchange; the slow progress in standardization and maintenance of equipment—all point to the imminent desirability of early progress with consolidation, if we are to have a transportation system adequate to the necessities of the country and containing in itself the strength for annual increases."

The Colorado River Project

With respect to the Colorado River Commission, Secretary Hoover states that on Nov. 24, 1922, the Colorado River compact was signed by the representatives of the states (Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming) and approved by the representatives of the Federal Government. According to Mr. Hoover, "the major purposes of the compact are to provide for equitable division and apportionment of the use of the waters of the Colorado River; to establish relative importance of different beneficial uses of water; promote interstate commerce to remove causes of present and future controversies and to secure the expeditious agricultural and industrial development of the Colorado River basin, storage of its water, and the protection of life and property from flood. To these ends the Colorado River basin is divided into two basins and an apportionment of the use of part of the water of the river is made to each of them with the provision that further equitable apportionment may be made.

"The compact provides a basis for the carrying out of one of the greatest of our national developments. The land under irrigation in 1920 from the river and its tributaries amounted to about 2,464,000 acres in the United States. It is estimated that the irrigated land can be increased to over 5,000,000 acres. Development of 5,000,000 h. p. is a possibility. With long distance transmission all of this can probably be brought into national use. One of the largest problems is the constant threat of the lower river to break through its banks and to flood the Imperial Valley, destroying prosperous communities valued at many millions of

dollars. Such a break occurred a few years ago and several million dollars were expended before the river was restored to its normal channel.

RATIFICATION PROBABLE

"The successful negotiation of an interstate compact in the settlement of such important and complex a problem is significant in that it marks the first time that such a large number of states have been able to settle fundamental interstate right by process of treaty. The compact becomes effective when it is approved by the legislatures of each of the several states and the Congress of the United States. The legislatures of six of the seven states have now ratified it, only Arizona having failed to take final action. Congressional action will doubtless await the approval of all of the seven states."

THE PUBLIC RIGHT IN COAL

Excerpts from Letters Commenting on Editorial which Appeared in December Mining Congress Joournal

"THE Public Right in Coal," an editorial which appeared in the December issue of the MINING CONGRESS JOURNAL, has called forth interesting comment from various members of the coal mining industry. In part, this editorial said:

> "The so-called right of the public to purchase coal has been accepted so long without question that it is regarded as an accepted fact. The fact is that coal is not a necessity except in the light that everything we need or use is a necessity. The only purpose in owning a coal mine is that coal may be mined therefrom, and the only purpose in mining that coal is that coal may be sold to someone at a profit. Having mined that coal, the operator is under no possible obligation to dispose of it except upon terms that are satisfactory to himself.
>
> "The fundamental principles of liberty require first that no worker shall be forced to work against his will; neither to mine coal or to raise wheat. No owner of wheat or coal can be forced to sell it and no purchaser can be forced to buy it.
>
> "The duty of the Government ends when it has protected each individual in the use of his property, the tax upon which supports the Government, and the individual in his right to work or not to work as he sees fit."

In the opinion of coal operators, the theory advanced is extremely timely and meets with approval. In commenting upon this editorial, the following excerpts are taken from letters received from coal operators by the MINING CONGRESS JOURNAL. One prominent operator says:

> "I agree with you that there is no basis for the charge that coal is a public utility and therefore subject to public control. In my opinion there is no 'coal problem,' so-called, which has not been brought about by the propaganda of the politicians and the press. If there is a 'coal problem,' there are similar problems in many other lines of industry equally important which the politicians and the press have not seen fit to advertise or which are being handled in an entirely different way. At the present time there is a surplus of wheat similar to the surplus of bituminous coal, but in the case of the farmers the politicians are advocating advancing money and even purchasing wheat on behalf of the Government.
>
> "There are plenty of statutes already on the books to guide the efforts of the Government, and competition and the law of supply and demand have already increased the quantity of bituminous coal available and reduced the selling price below the cost of production. Let us stand with President Harding when he said that he believed in 'more business in Government and less Government in business,' and also when he said 'the country is at the mercy of the United Mine Workers of America.' So-called problems in coal, wheat and other commodities due primarily to the War cannot be cured by the entrance of the Government into business and, certainly, no governmental effort should be made to handle them individually. If the Government attempts to take over the regulation of all business, we will have on a more gigantic scale a repetition of the failure of the Railroad Administration and the United States Shipping Board. The latter, it seems to me, might well develop into one of the greatest scandals in the history of our Government if all the facts were known." * * * *

Quoting from another letter an operator points out:

> "From time to time, and lately with greater frequency, there emanates from bureaucratic centers in Washington the statement that the public demands Congressional regulation of the coal industry. It is true there is a feeling on the part of the public that something ought to be done about the coal industry, but the public does not realize that for the last six years the industry has been as completely under Government control as though a Federal Fuel Administration had existed throughout that time, because each time there has been a coal crisis, a settlement of that crisis has been effected under Government direction, and each settlement has borne more heavily upon the public press. I cannot believe that in view of this record the public wishes to perpetuate a system that has cost it dearly. Does not close analysis show that what the public complains about is Government control and that it is being grievously misled by those who would persuade it that Government control should be further extended?" * * * *

That coal bears a heavy tax burden, is shown from the following:

> "Referring to the article 'The Public Right in Coal,' in the MINING CONGRESS JOURNAL, you are right when you say: 'It seems high time that the public mind shall drift back to fundamental principles. The existence of Government depends upon its power to tax the property of individuals, in order that such Government may be provided with funds necessary to its existence.'
>
> "As regards the Government tax on the coal industry, I would refer you to a recent report of the Bureau of Internal Revenue, which states that there were 3,656 companies who made an income tax return in 1921. 1,079 companies showed a profit totaling $82,654,787.00, on which these companies paid a total income tax of $15,219,444.00. The remaining 2,577 coal mining corporations showed a deficit totalling $72,521,-815.00. Taking the return on the 3,656 companies as a whole, deducting the losses from the profits, would leave a net profit to the entire coal industry of $10,132,972.00, on which the Government collected taxes amounting to $15,219,444.00, or $5,086,472.00 more than the combined profits of all coal mining companies in the country, taking the industry as a whole.
>
> "This would indicate that the Government had gotten about all that was possible out of the coal industry, and that the coal companies as a whole were paying the Government for the pleasure of doing business.
>
> "The potential producing capacity of the country is in excess of 800,000,000 tons per year. Of this 800,000,000 tons, less than 10 percent is anthracite coal. Of this anthracite coal more than half is what is known as steam sizes, which are being at this time and have been for many months sold for less than the cost of production in an effort to compete with the low prices made on bituminous coal for steam purposes.
>
> "Ninety percent of the production of the country representing the bituminous industry is being sold at cost or less than cost, plus 5 percent of the steam sizes of anthracite, which are being sold for less than cost, would leave only 5 percent of the production of the country, which is bringing a profit, and this does not mean that high prices on the prepared sizes of anthracite, representing 5 percent of the total production of the country, although bringing a large amount in dollars per tons, is excessive, because these prepared sizes must necessarily take up the difference between cost and the selling price on steam sizes, if the anthracite is to show any profit on the total production.
>
> "The high prices on prepared sizes of anthracite coal, which are causing all of the complaints that are now before Congress, is brought

about from the fact that a certain portion of the public who have been used to burning anthracite coal insist upon having these particular sizes, which might be termed a luxury coal, as there is ample coal of different grades which could be used as substitutes for anthracite, which would keep people warm at half the cost of these prepared sizes in the market; but the people have refused to use substitutes and demanded a specific preparation on coal, and 95 percent of the coal industry is condemned for what the people believe to be an extortion on less than 5 percent of the production of the country.

"These facts have been explained to every commission which has investigated the coal industry; but these explanations seem to have made no impression whatever on the would-be regulators of the industry.

"The high prices which the people complain of are due to a labor monopoly, who have been following a rule or ruin policy. The bituminous coal industry throughout the country is prostrated. Reports of the Department of Commerce, issued monthly, have made no secret of this condition, and have advertised it far and wide in their analysis of the bituminous coal trade. More than half of the anthracite coal which has been used for steam purposes is forced on the market at a price less than the cost of production, as it must compete with the bituminous for steam.

"The almost infinitesimal percentage of the industry as a whole which is represented by prepared sizes of anthracite seems to have found a place in the public mind in the reverse of its importance.

"The cure lays with the public, first through selection of other grades of coal for domestic use, and second through prompt elimination of politicians who are so unmindful of the public wants as to curry political favor through the continuance of a labor monopoly, which should be curbed rather than encouraged by these political bodies."

WHAT STANDARDIZATION OF MINE PUMPS MEANS TO OWNERS AND OPERATORS

By F. L. Atwood *

BY the use of standard double and single suction pumps—single suction pumps to be used for gathering purposes and double suction used for raising water to surface—using one pump up to 200-foot head and for higher heads use two or more of same pumps in series, or in extremely high heads use same pumps in steps, all pumps controlled from one switch. This method allows the user to carry an extra pump which can be put into use anywhere along the line without causing any serious delay and at a cheaper first cost than it would be to have a special multi-stage pump built for these special operating conditions, which would make it necessary to carry an extra stand-by unit to insure against losses in cases of breakdown or accident.

Our experience with multi-stage pumps in mine work, covering a period of six to eight years, has proven to our satisfaction that, while the multi-stage pump is satisfactory for handling clear water, it does not have a very long life in mine water, less in fact in coal mines than in other classes of mines, on account of impurities such as acid water, grits and all kinds of dirt which, under the higher velocities and pressures of the multi-stage pumps, cause erosion, which added to the corrosion caused from the acids and other impurities found in practically all coal mines shortens the life of the multi-stage pump materially.

We also find from observation in a large number of mines that if a little more care were given to keep the sump, or well, protected and a little cleaner, that the life of any pump would probably be doubled.

The following is a brief outline of what the Hill Pump and Turbine Works are doing on the above lines, which they put into operation some few months ago and find that it is working out very satisfactorily. They are building a line of mine pumps in the following sizes, both single and double suction, from 1 inch to 6 inches, inclusive. They have standardized on sizes as follows, the size of the discharge opening to determine the size of the pump.

It has been the practice of a large number of pump builders to take, for instance, a 3-inch pump and put a 4-inch discharge opening on it and call it a 4-inch pump, which allows them to quote a cheaper price and in a good many cases get away with it, but the customer is not getting any more than he is paying for, and in some cases, where there is no competition, he pays for a 4-inch pump and gets a 3-inch pump.

By the above method of standardization on sizes and design the Hill Pump and Turbine Works are able to meet 90 percent of the operating conditions on the double suction line, and nearly all of the operating conditions on the single suction, which are used mostly for gathering pumps.

The following is an outline of the way they handle sales orders on the above standardized line, which will show that upon receipt of a sales order they are able to make prompt shipment for the reason that all of the above sizes are in production at all times, allowing them to make shipments in from two to four days. These pumps are put into production on lot orders on a maximum and minimum basis. All pumps are built with maximum diameter impellers. When a sales order is received a pump from a lot order of that particular size is assigned to this sales order, and the production department is ordered to cut impeller to proper size to meet the operating conditions of this particular sales order. When sales orders have been applied to any particular lot order so as to bring same to its minimum, there is automatically another lot order for the maximum amount placed in production. This keeps pumps and spare parts in production at all times and allows orders to be filled promptly.

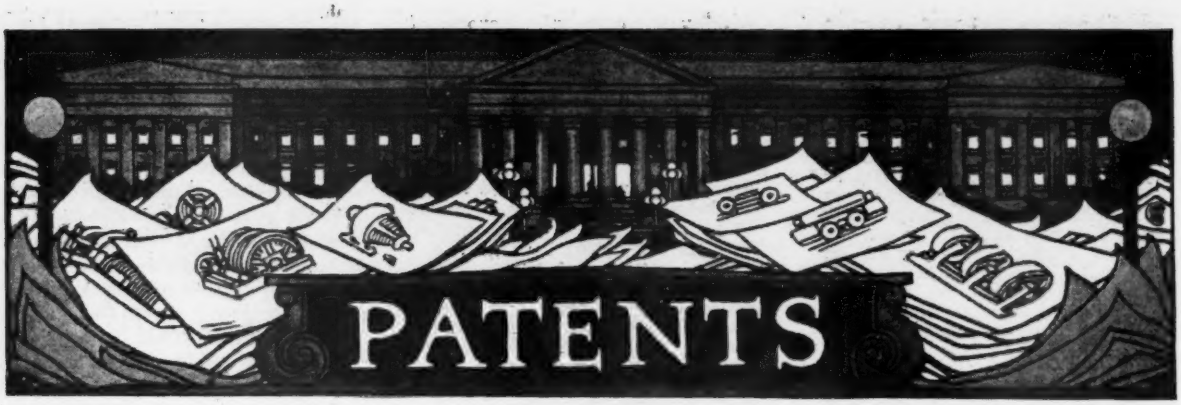
* General Manager Hill Pump & Turbine Works, Anderson, Ind.

FINDS TITANIUM BETTER THAN SILICON FOR RAIL STEEL

AN investigation of some of the properties of steel rails deoxidized by the addition of titanium and silicon has been carried out by the Bureau of Standards. The tests showed that the steel treated with titanium was sounder and more homogeneous than the silicon treated steel, there being much less evidence of segregation in sulphur prints of the titanium treated steel and practically no streaks of impurities after etching. The decreased segregation brought about by the titanium treatment resulted in greater toughness and somewhat greater uniformity of mechanical properties in the portion of the rail from the top of the ingot. At the bottom end of the rail, however, the titanium treatment did not improve the steel appreciably more than the silicon treatment did. The greatest value of titanium treatment lies in its control of segregation and the elimination of the hard and brittle portions which the first rails from the ingot sometimes contain.

These tests form a continuation of previous studies of the various processes of steel rail manufacture with a view to establishing the best practice for insuring sound rails. The work was carried out in cooperation with the Titanium Alloy Manufacturing Company, the Illinois Steel Company, the Illinois Central Railroad, and the R. W. Hunt Company, and consisted of a survey of homogeneity, soundness, and uniformity of mechanical properties of sections from the top and bottom ends of the first rail of a series of heats, some of which were deoxidized with titanium and some with silicon.

The results are given and the tests described in Technologic Paper No. 241 of the Bureau of Standards.



1,458,357—*C. Postel*, New York, June 12, 1923, assigned to American Shale Reduction Co.

RETORT FOR OIL SHALE having a closed jacket surrounding the main portion thereof and containing molten metal and means for heating the exterior of the jacket to maintain the metal in molten condition, the heat from the jacket being evenly distributed to all parts of the retort within the jacket.

1,458,789—*J. P. Widas, et al.*, Caspian, Mich., June 12, 1923.

FLOTATION PROCESS which comprises oiling and sulphidizing oxidized ore in an aqueous pulp. Thereafter removing the water and diluting said pulp with uncontaminated water and then subjecting the same to flotation.

1,461,807—*A. Silver*, Tonopah, Nev., July 17, 1923, assigned to The Merrill Company.

PROCESS OF TREATING ORES containing matter which prematurely removes dissolved metals from solution, which consists in grinding the ore in water in the presence of an oleaginous substance, substantially unalterable by a metal solvent, and then subjecting the ore to cyaniding.

1,461,844—*E. H. Hersh*, Altoona, Pa., July 17, 1923.

COAL TIPPLE ATTACHMENT comprising a delivery gate in combination with the tipple frame work and delivery chute, a dished disk having its concave side exposed to the pressure of coal within the tipple and also provided with an opening for aligning with the chute, and means for rotating the disk.

1,461,918—*F. Laist*, Anaconda, Mont., July 17, 1923, assigned to Anaconda Copper Mining Company.

PRECIPITATING METALLIC COPPER from solutions comprising introducing into the solution maintained under appropriate superatmospheric pressure and at a temperature below that at which substantial reaction occurs, sulphur dioxide in quantity more than would be sufficient to saturate the solution at atmospheric pressure, and thereafter raising the temperature to effect the precipitation of copper, substantially free of sulphur compounds.

1,461,957—*H. H. Alexander*, Westfield, N. J., July 17, 1923, assigned to American Smelting and Refining Company.

RECOVERING TIN which consists in treating the ore in a blast furnace with suitable material adapted to form silicate of tin and removing the same as a slag.

1,461,977—*S. E. T. Ewing and J. L. Willey*, Johannesberg, Transvaal, South Africa, July 17, 1923.

TUBE MILLING ORE which consists in supplying to the tube mill, as the regular mill feed, ore in large and angular fragments, withdrawing from the tube mill fragments which have become rounded, breaking them and returning the breaker product to the tube mill.

1,462,023—*W. M. Strong*, San Francisco, Calif., July 17, 1923.

OIL SHALE RETORT.

1,462,064—*A. A. Kelly*, London, England, July 17, 1923.

TREATING BORON ORES for the production of sodium decaborate by mixing the ore with water, heating it and treating it with sulphur dioxide, so that on cooling the decaborate is obtained.

1,462,108—*F. S. Barks*, St. Louis, Mo., July 17, 1923, assigned to Lincoln Steel & Forge Company.

MINE CAR COUPLER having spaced horizontal jaws, a pin swiveled therein, a link mounted between the jaws and upon said pin, said link having sliding movement relative to said pin and having vertical movement with said pin relative to said jaws but being designed to turn with the pin, and a spring engaging the upper end of the pin for maintaining the link in predetermined vertical and horizontal planes.

1,462,288—*W. J. Knox*, New York, N. Y., July 17, 1923.

INCREASING PRODUCTION OF OIL WELLS by maintaining the oil-bearing stratum adjacent the well at a temperature above normal and sufficiently high to reduce the viscosity of the oil therein and facilitate its flow toward the well by discharging heated liquid into the well in a sufficiently continuous supply to maintain the desired temperature in said stratum and removing the same in the usual pumping operation.

1,462,418—*L. Malecot*, Grand Croix, France, July 17, 1923.

1,462,584—*D. K. Smith*, Denver, Colo., July 24, 1923.

PLACER MINING MACHINE.

1,462,596—*E. P. Engelbrecht*, Chicago, Ill., July 24, 1923.

SLATE BRICK made by mixing with burned and granulated coal mine slate a small amount of unslacked lime, pressing the mixture into proper shape and heating the pressed articles under steam pressure.

1,462,681—*N. K. Bowman*, Bowdil, Ohio, July 24, 1923.

MINING MACHINE BIT.

COAL WASHER comprising a horizontal water conveying conduit, a vertical conduit connected at its lower end to the horizontal conduit through which said water flows upwardly for effecting a final separation, a hopper containing substantially stationary water connected to the upper end of said vertical conduit, and a slightly sloping conduit through which water carrying the substances to be separated flow, said sloping conduit having a passageway to said hopper, at which passageway the preliminary separation is effected.

1,462,688—*C. E. Davis*, Chicago, Ill., July 24, 1923, assigned to Goodman Mfg. Co.

APPARATUS FOR HANDLING ORE comprising a frame supported against lateral movement and a draft operated scraper, adapted to be moved horizontally about said frame and having supporting engagement therewith, whereby said scraper is positively directed into the pile of material to gather the same.

1,463,405—*J. P. Ruth*, Denver, Colo., July 31, 1923.

FLOTATION APPARATUS having a mixing compartment and a separating compartment adapted to maintain a relatively quiescent body of pulp therein, a partition dividing the compartments and over the top of which pulp is adapted to flow, means to maintain the pulp level above said partition, a hollow member on the top of said partition, one wall of said member being porous, means for introducing gas into said member whereby it will pass through said porous wall and into the overflowing pulp and means in the mixing compartment for introducing gas into the pulp, said pulp level being uninterrupted whereby pulp and froth may flow freely and uninterruptedly from the top of the mixing compartment over said member and across said separating compartment.

1,463,713—*W. M. Mordey*, Westminster, England, July 31, 1923.

ELECTRO MAGNETIC SEPARATION by causing a stream of pulp to flow longitudinally through a long inclined trough slightly higher at one side than the other and arranged over the parallel poles of an electro magnetic system and subjecting the stream to the action of the magnetic field in such a way that the material which is responsive thereto will become separated from the gangue and the other material will be gradually swept by such magnetic field in a lateral direction from the higher longitudinal side of the trough while the inert matter will be caused by gravity to move gradually in the opposite lateral direction.

1,449,008 — *P. H. Burnell*, Rock Springs, Wyoming, March 20, 1923.

COAL LOADING MACHINE having conveying means embodying upper and lower conveyors with means for longitudinally adjusting the upper conveyer with respect to the lower conveyer whereby the former may be projected forwardly as the coal is gathered with means for angularly adjusting both conveyers horizontally.

1,449,797—*A. C. Vivian*, London, England, March 27, 1923.

FLOTATION PROCESS containing metalliferous oxygen containing compounds, the improvement comprising the addition to the pulp of organic compounds, such compounds being amphoteric compounds containing nitrogen and oxygen and capable of acting chemically upon the constituent it is desired to separate, forming resinous decomposition products which facilitates separation of the metal bearing constituent by flotation.

1,450,041—*N. T. Kitchen*, Logan, W. Va., March 27, 1923.

SPRING BUMPER FOR MINE CARS.

1,450,118—*H. A. Smith and H. H. Brown*, Oakland, Calif., March 27, 1923.

ORE CONCENTRATING DEVICE for washing gold ore in which means are provided for retaining the heavier mineral bearing dirt within the tank of the machine for further and subsequent treatment.

1,451,101—*E. C. Morgan*, Richmond Hill, New York, April 10, 1923.

MINING APPARATUS for coal-mining and used for advancing the track and trolley line and comprising a pair of trucks, means for coupling said trucks together, means adjustable in elevation and carried at one end of the forward truck in position to guide track sections onto and off said forward trucks, and rope winding mechanism comprising a rope adapted to have a free end connected to a track section while being guided onto or off said forward truck.

1,451,287—*G. W. Wilmot and F. H. Blatch*, Hazelton, Pa., April 10, 1923, assigned to Wilmot Engineering Company.

COAL JIG comprising a reciprocating plunger, the said plunger including a plurality of bars arranged in spaced parallel relation to each other, the upper and lower edges of which are wedge-shape and tubular valves situated between the opposing tapered sides of the upper edges of adjacent bars.

1,451,454—*F. A. Beauchamp*, Berkeley, Calif., April 10, 1923.

PROCESS AND APPARATUS FOR THE RECOVERY OF PRECIOUS METALS BY AMALGAMATION, comprising a centrifugal bowl so shaped as to confine a layer of fluid mercury around its walls at an angle to the horizontal, a feed spout for the pulp extending downwardly into the bowl and sealed at its lower end by the mercury, the lower portion of said feed spout being formed of insulating material.

1,451,567—*C. E. Erickson*, Delta, Utah, *and M. J. Mast*, Grand Junction, Col., April 10, 1923.

GOLD PANNING MACHINE.

1,451,690—*J. R. Fleming*, Scranton, Pa., April 17, 1923.

MINING CAR TRUCK comprising a bearing plate, a journal block below said bearing plate and means thereon for supporting said journal blocks centrally therefrom.

1,451,840—*R. Novotny*, Portage, Pa., April 17, 1923.

CENTRIFUGAL AMALGATOR having means for injecting mercury into and removing it from the device so that the mercury may be treated by any known means to make it nascent as by the addition of some electro positive metal such as by adding metallic sodium or by treating it in an electrolytic cell.

1,452,969—*C. E. Hebbard*, Joplin, Mo., April 24, 1923.

CONCENTRATING TABLE having an adjustable screen compressed by the movement of the table away from the bumper and which spring when released acts to urge the bumping block into contact with the bumper to give the required jar to the table, and provide a second spring whose tension may be so adjusted as either to cause the immediate and full retraction of the table and bumper block from the bumper upon a predetermined movement of the power actuated means, when the tension is relaxed.

1,452,994—*W. Weber*, Weisbaden, Ger-Germany, April 24, 1923, assigned to the Firm Gewerkschaft Hausbach II.

METHOD FOR DEPOSITING THE MASSES OF SAND AND GRAVEL OBTAINED IN BROWN-COAL OPEN WORKINGS consisting in conducting the mixture of sand, gravel and water coming from the open working first between two boardings standing at a determined distance the one from the other and extending between the open workings and the dumping site so that a high dam of sand and gravel is erected between the boardings, whereupon the mixture of sand, gravel and water is conducted to a point of the field which is situated at a large distance from the dam so that the water has separated from the solid admixtures long before the deposited material reaches the dam and in draining the dumping site of the water by means of ditches arranged at the lowest parts of the flushing field.

1,456,563—*A. Norega*, New York, May 29,1923.

ARCH SUPPORT FOR MINES.

1,452,012—*G. F. Wieseckel*, Hagerstown, Maryland, April 17, 1923, assigned to Western Maryland Railway Company.

COAL TRIMMER in which the endless belt is provided with lateral strips of armor extending the entire width of the belt. In the preferred form, the strips are substantially inverted T-shaped placed laterally of the belt at short intervals.

1,452,016—*C. Allen*, El Paso, Texas, April 17, 1923.

SLIME PULP THICKENER. In the present invention the volume of the slime pulp in the thickener in no manner alters the proportion of the liquids to the solids discharged. The degree of thickening is controlled by the increase in specific gravity, due to the settling of the material of heavier specific gravity without reference to the volume fed to the thickener and for whatever degree of thickening the device is adjusted. The device comprises two connecting compartments having in one a liquid and in the other a mixture of liquids and solids. The variations in the density of the pulp, act to raise and lower the column of liquid which column carries a float oppositely connected to a valve at the bottom of the tank controlling the discharge orifice. When the pulp attains a certain density the valve is automatically opened to permit the discharge of the thickened pulp through the bottom orifice, and when the density of the pulp falls below a critical point the valve is automatically operated to close the orifice.

1,452,181—*R. J. Buter*, Tonopah, Nevada, April 17, 1923.

ORE CLASSIFIER in which the ore crushed and mixed with water is discharged onto a vibratory cone from which it is distributed against the side wall of a funnel-shaped receiver which is filled with water having an upward current and which washes away the small and lighter particles, the heavier particles rebounding from the sides of the receiver to different distances where they are caught by suitable separating means and directed to different receptacles.

1,456,798—*W. H. Hannay*, Trail, British Columbia, May 29, 1923, assigned to the Consolidated Mining and Smelting Company of Canada.

EXTRACTING LEAD FROM SULPHIDE ORES, which consists in grinding the ore in a neutral liquid, leaching it with ferric chloride in the presence of sodium chloride to dissolve the lead sulphide, electrolizing the solution to deposit the lead with simultaneous regeneration of the ferric chloride, and washing the residue to remove the chlorine therefrom.

1,456,930—*C. S. Oldroyd*, Cincinnati, Ohio, May 29, 1923, assigned to Oldroyd Manufacturing Co.

MINING AND QUARRYING MACHINE comprising cutting means actuated by the machine and projected endwise into the wall of coal or other material and then moved sidewise to make a sweeping cut. The invention consists of a truck having a rigid frame or body on wheels; a neck located at the front of the truck body and rotatable on a horiontal axis extending lengthwise of the machine and approximately in an upright plane cutting midway between the track rails, and cutting mechanism supported by said neck and adapted to be adjusted for cutting in various directions.

1,456,991—*E. C. Morgan*, New York, May 29, 1923.

MINING MACHINE which completely severs or cuts sections or blocks in the wall of a mine. The machine is arranged to completely cut or sever a section, preferably a crescent-shaped section of coal from the wall of the mine, break or divide said section into a plurality of smaller sections and convey or carry the smaller section away from the mine wall to a point where they may be conveniently discharged from the machine.

1,457,077—*T. A. Janney*, Garfield, Utah, May 29, 1923.

FLOTATION MACHINE in which mechanical agitation is followed by pneumatic aeration in the separating box. The invention comprises an improved form of agitation vessel in combination with improved means for effecting the circulation of the pulp, means for introducing pulp into the agitation vessel and a new method of and location for the introduction of the pulp.

1,459,837 — *B. A. Mitchell*, Garfield, Utah, June 26, 1923.

VIBRATING SCREEN, means for supporting said screen and maintaining a high tension therein, and means positively connected to said screen for producing minute circular vibrations therein, so as to prevent clogging of the screen.

1,459,838—Same.

VIBRATING SCREEN, having means located in the plane of the screen for producing high frequency vibration in a plane perpendicular to the plane of the screen.

INDUSTRIAL ITEMS

HEARINGS being conducted for the Senate Gold and Silver Commission by Fletcher Hamilton in Western cities are expected to be concluded some time in February. The Commission will issue an analysis of this testimony, bringing out suggestions for improvement of conditions which now operate to the disadvantage of the mining industry. It is expected they will provide a basis for the commission's recommendations. Hearings yet to be held by Mr. Hamilton will be at several points on the Mother Lode and in Northern California; in Central and Eastern Nevada; at five points in Arizona and New Mexico; at three additional points in Colorado; at one point in Montana; and at Seattle and San Francisco, the latter for the purpose of obtaining testimony of Alaskan producers.

The Department of Agriculture issued a report on the work of scientists in attempts to recover free nitrogen from the air for use as fertilizer and other purposes. It states that nitrogen must come in greater proportion from sources other than the natural deposits. It is declared that the United States has taken very little part in peace-time development of actual producing plants of nitrogen fixation, less than 1 percent of the country's requirements being supplied by such process. Present consumption of nitrogen in fertilizers in this country is fixed at 200,000 tons per year. Reference is made to the fact that the government plant at Muscle Shoals, which has a capacity of 40,000 tons per annum, is idle. The Fixed Nitrogen Research Laboratory has been studying the direct synthetic ammonia process which is considered the most promising for fixing atmospheric nitrogen. "Even during war times it was thought this process would in time displace the cyanamide process, but owing to lack of definite information concerning its adaptation, more attention was given to the cyanamide process," the Department says. It is stated that the opportunity for reducing the cost of ammonia production is in the manufacture of pure hydrogen consumed in the direct synthetic ammonia process, and future activities will be centered on the problem of pure hydrogen production.

Investigations have been made of light alloys for the purpose of substituting magnesium for aluminum in engine parts which are not highly stressed which indicate that magnesium may be used. An experimental engine has been constructed from magnesium, resulting in a saving in weight of 30 percent over aluminum. While no predictions are made, the bureau says indications are that eventually the use of magnesium will be very largely adopted in connection with aircraft engine construction.

Investigations have also been conducted looking to the substitution of forged duralumin for steel in a number of highly stressed parts in engines, with promising results, which have led to its substitution for forged steel in a number of minor parts, and indications are that similar substitutions may be made for connecting rods, propeller hubs, etc. Substitution of duralumin for steel results in saving in weights.

The bureau announces that a helium purification plant will be located at Lakehurst, N. J., the special equipment for which is being procured and installed by the Bureau of Mines, which has supervision over experimental and research activities.

Progress has been made in metal construction of airplanes, according to the report of the Navy Bureau of Aeronautics, although the high cost of this type of construction and problems incidental to metal construction have prevented rapid advancement. Several contracts have been let to manufacturers to build all-metal airplanes and for the construction in metal of various airplane units. The naval air craft factory is building an all-metal airplane and several types of metal floats in addition to metal construction in connection with rigid airships. Several representative metal airplanes from foreign manufacturers have been obtained for the purpose of studying methods of construction.

The bureau says the use of metal hulls for boat seaplanes offers particularly attractive possibilities. The possibilities of the use of steel and duralumin propellers have been investigated and contracts made for experimental propellers. Among planes under construction is an all metal airplane to be used for marine expeditionary operations, and an all metal boat seaplane which the bureau says should be interesting in connection with the construction of hulls.

Tests have been made to determine the resistance of duralumin plate to fatigue caused by alternate bending. The bureau says that results to date are inconclusive as they do not show a definite lower limit of stress below which a specimen can be subjected to an indefinite number of reversals of stress, although several specimens have withstood 200 million reversals without failure, which approximates an indefinite figure. Manufacturers of duralumin have cooperated by supplying material for tests, which it is believed will be of greater value to industry than to the government.

The Bureau of Standards is conducting tests with steel to determine the strength retained by it when heated to red heat as in a fire, and the resistance which it offers to forging. Experiments are also being made for the purpose of finding an alloy of steel which will retain a considerable portion of its strength at temperatures up to 1200 and 1600 degrees fahrenheit.

Because of the interest in the use of rock dust to prevent the widespreading of coal dust explosions, the Bureau of Mines has placed in line for immediate publication the technical paper by George S. Rice, chief mining engineer, "Rock-Dusting in Great Britain and France as a Means of Preventing Coal Dust Explosions." Mr. Rice recently returned from an inspection trip through the coal mines of Europe.

Responses are being received to a letter Director Bain wrote to manufacturers of mining machinery, calling attention to the fact that, although there are machines on the market for the grinding of rock into dust, there are no machines being manufactured for spreading the dust.

The manufacturers express their interest in the proposition, and their willingness to cooperate with bureau engineers in working out desirable features and specific requirements.

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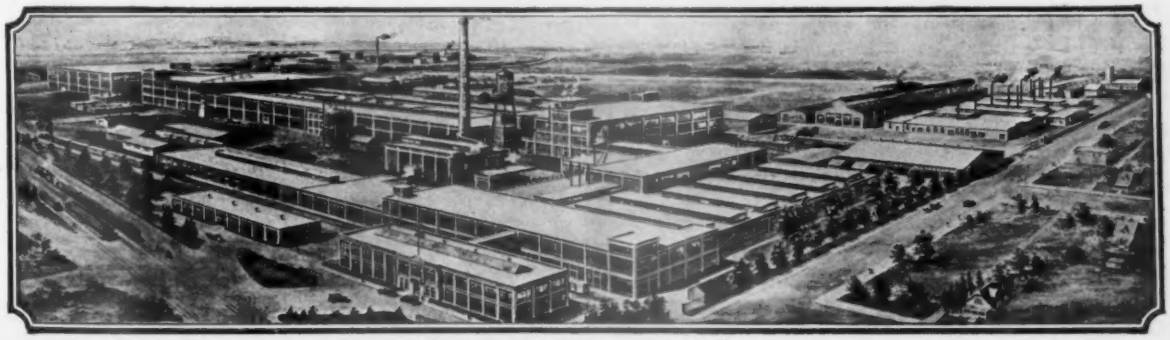

TWENTY YEARS AFTER

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ACETYLENE GAS
Prest-O-Lite Co., 30 East 42nd St., New York City.

ACID, SULPHURIC
Irvington Smelting & Refining Works, Irvington, N. J.

AERIAL TRAMWAYS
American Steel & Wire Co., Chicago and New York.

AIR COMPRESSORS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., 11 Broadway, New York City.

AMALGAMATORS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

APPLIANCES, ENGINEERING
The Lunkenheimer Co., Cincinnati, Ohio.

ARMATURES
General Electric Co., Schenectady, N. Y.

AUTOMATIC CAR CAGERS
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

AUTOMATIC COAL SKIP
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

AUTOMATIC (Mine Doors, Truck and Electric Switches)
American Mine Door Co., Canton, Ohio.

BAROMETERS
Taylor Instrument Companies, Rochester, N. Y.

BATTERIES (Storage, Gas Welding, Cutting, Dissolved Acetylene)
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General Electric Co., Schenectady, N. Y.

BELTING (Conveyor, Elevator, Transmission)
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

BELTING, SILENT CHAIN
Morse Chain Co., Ithaca, N. Y.

BINS (Coke and Coal)
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

BIT SHARPENERS
Denver Rock Drill Mfg. Co., Denver, Colo.
Ingersoll-Rand Co., 11 Broadway, New York City.

BLASTING POWDER
Hercules Powder Co., 934 King St., Wilmington, Del.

BLASTING SUPPLIES
du Pont Powder Co., The E. I., Wilmington, Del.
Hercules Powder Co., 934 King St., Wilmington, Del.

BLOWERS
General Electric Co., Schenectady, N. Y.

BLOWERS' CENTRIFUGAL
Ingersoll-Rand Co., 11 Broadway, New York City.

BOILER MOUNTINGS
The Lunkenheimer Co., Cincinnati, Ohio.

BOILERS
Allis-Chalmers Mfg. Co., Milwaukee, Wis. (feed pump).

BREAKERS (Construction and Machinery)
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Wilmot Engineering Co., Hazleton, Pa.

BRIQUETTING MACHINERY
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

BUCKETS (Elevator)
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CABLES (Connectors and Guides)
American Mine Door Co., Canton, Ohio.

CABLEWAYS
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

CAGE (Safety Appliances)
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

CAGES
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Holmes & Bros., Robert, Inc., Danville, Ill.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

CAR CONTROL AND CAGE EQUIPMENT
Car-Dumper & Equipment Co., Chicago, Ill.

CAR AND CAR WHEELS
Heckensmith Mine Car Co., Penn Station, Pa.

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Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CHAINS
Jeffrey Mfg. Co., Columbus, Ohio.
Morse Chain Co., Ithaca, N. Y.

CHAINS, AUTOMOBILE ENGINE
Morse Chain Co., Ithaca, N. Y.

CHAINS, DRIVE
Morse Chain Co., Ithaca, N. Y.

CHAINS, FRONT END
Morse Chain Co., Ithaca, N. Y.

CHAINS, OILING
Morse Chain Co., Ithaca, N. Y.

CHAINS, POWER TRANSMISSION
Morse Chain Co., Ithaca, N. Y.

CHAINS, SILENT (Rocker-Joint)
Morse Chain Co., Ithaca, N. Y.

CHAINS, SLING
Morse Chain Co., Ithaca, N. Y.

CHAINS, SPROCKET WHEEL
Morse Chain Co., Ithaca, N. Y.

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Roessler & Hasslacher Chemical Co., 709-717 Sixth Avenue, New York.

CHEMISTS
Hunt, Robt., Company, Insurance Exchange, Chicago, Ill.

CIRCUIT BREAKERS
General Electric Co., Schenectady, N. Y.

CLAMPS (Trolley)
Ohio Brass Co., Mansfield, Ohio.

CLUTCHES
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

COAL COMPANIES
Lehigh Coal & Navigation Co., Philadelphia, Pa.
Stonega Coal & Coke Co., Philadelphia, Pa.
Thorne, Neale & Co., Philadelphia, Pa.
Bertha-Consumers Company, Chamber of Commerce Bldg., Pittsburgh, Pa.

COAL CRUSHERS
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

COAL CUTTERS
Goodman Mfg. Co., Chicago, Ill.
Ingersoll-Rand Co., 11 Broadway, New York City.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

COAL DRYING PLANTS
Roberts & Schaefer Co., Wrigley Bldg., Chicago, Ill.

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Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.
Roberts & Schaefer Co., Wrigley Bldg., Chicago, Ill.

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Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Goodman Mfg. Co., Chicago, Ill.
Ingersoll-Rand Co., 11 Broadway, New York City.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Roberts & Schaefer Co., Wrigley Bldg., Chicago, Ill.

COAL MINE POWER PLANTS
Roberts & Schaefer Co., Wrigley Bldg., Chicago, Ill.

COAL MINING PLANTS
Ingersoll-Rand Co., 11 Broadway, New York City.
Roberts & Schaefer Co., Wrigley Bldg., Chicago, Ill.

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Roberts & Schaefer Co., Wrigley Bldg., Chicago, Ill.

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General Electric Co., Schenectady, N. Y.

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General Electric Co., Schenectady, N. Y.
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Ingersoll-Rand Co., 11 Broadway, New York City.

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CONCRETE REINFORCEMENT
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CONDENSERS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Ingersoll-Rand Co., 11 Broadway, New York City.

CONSULTING ENGINEERS
Roberts & Schaefer Co., Wrigley Bldg., Chicago, Ill.

CONTRACTORS
Roberts & Schaefer Co., Wrigley Bldg., Chicago, Ill.

CONTROLLERS
General Electric Co., Schenectady, N. Y.
Goodman Mfg. Co., Halsted St. and 48th Place, Chicago, Ill.

CONVEYORS, BELT
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CONVEYORS, CHAIN FLIGHT
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Wilmot Engineering Co., Hazleton, Pa.

CONVEYORS, COAL
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

CONVEYORS AND ELEVATORS
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CONVEYORS, PAN OR APRON
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CONVEYORS, SCREW
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

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COPPER WIRE
Anaconda Copper Mining Co., 111 W. Washington St., Chicago, Ill.

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H. R. Ameling Prospecting Co., Rolla, Mo.
Hoffman Bros., Punxsutawney, Pa.

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Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

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Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CRUSHING PLANTS, COKE
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

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Roessler and Hasslacher Chemical Company, 709 Sixth Avenue, New York City.

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Roberts & Schaefer Co., Wrigley Bldg., Chicago, Ill.

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Hoffman Bros., Punxsutawney, Pa.

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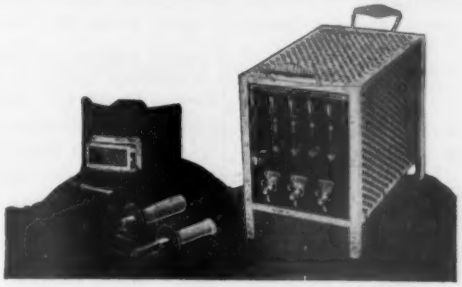

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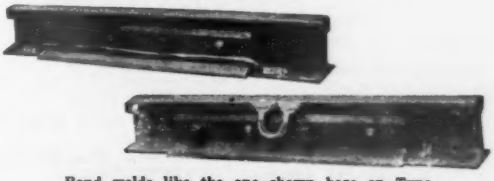

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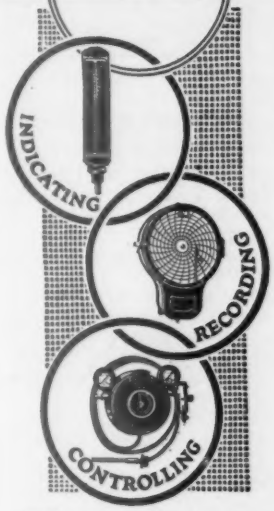
Tycos Temperature Instruments



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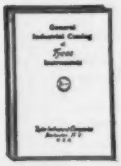

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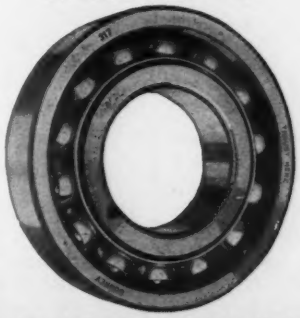

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Ohio Brass Co., Mansfield, Ohio.

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General Electric Co., Schenectady, N. Y.

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General Electric Co., Schenectady, N. Y.
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Morse Chain Co., Ithaca, N. Y.

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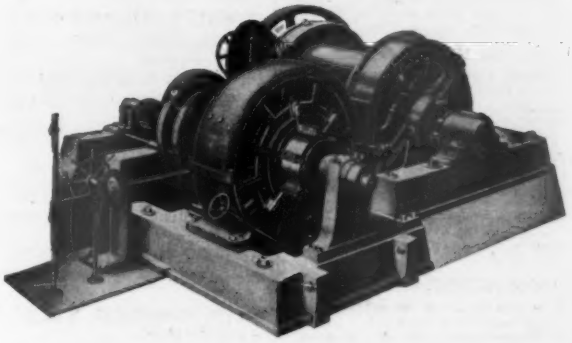

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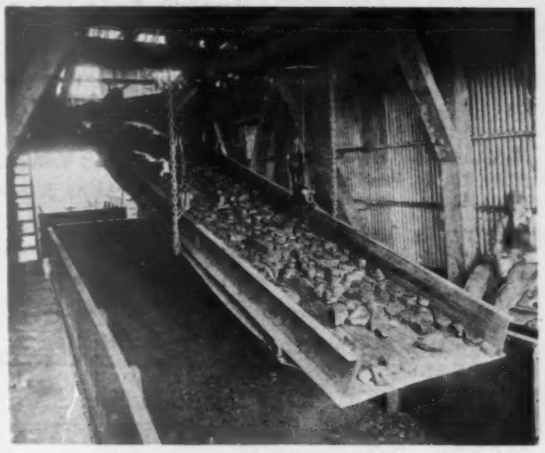

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Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

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MINE CAR TRUCKS
Hockensmith Wheel & Mine Car Co., Penn Station, Pa.

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Goodman Mfg. Co., Chicago, Ill.

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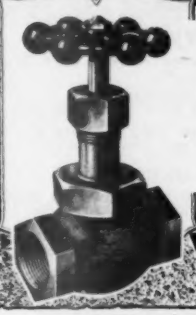

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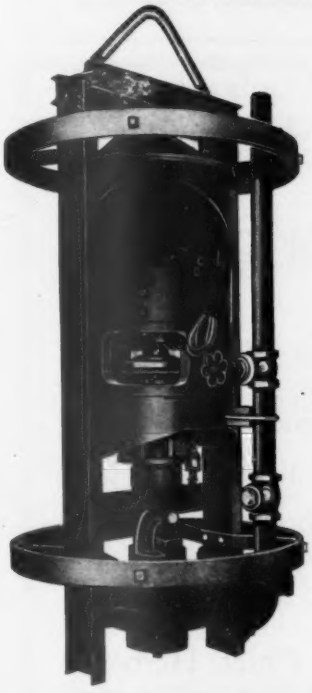

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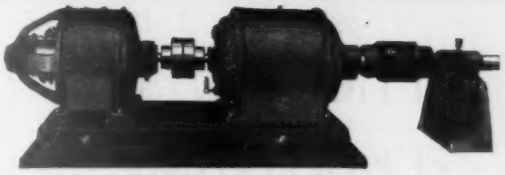

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Allis-Chalmers Mfg. Co.	10	Jones Fdry. & Machine Co., W. A.	25
Ameling Prospecting Co., H. R.	27	Joy Machine Co.	11
American Cyanamid Co.	4	Lehigh Coal & Navigation Co.	33
American Mine Door Co.	23	Lidgerwood Mfg. Co.	12
American Steel & Wire Co.	15	Lunkenheimer Co.	25
American Zinc, Lead & Smelting Co.	15	Morse Chain Co.	7
Anaconda Copper Mining Co.	13	New York Engineering Co.	27
Aurora Pump & Mfg. Co.	25	Ohio Brass Co.	21
Bertha-Consumers Co.	31	Phelps Dodge Corpn.	25
Boyle, John	36	Prest-O-Lite Products Co.	19
Connellsville Mfg. & Mine Supply Co.	23	Roberts & Schaefer Co.	23
Denver Rock Drill Mfg. Co.	3	Roebling's Sons Co., John A.	25
Du Pont de Nemours & Co., E. I.	17	Roessler & Hasslacher Chemical Co.	29
Falk Corporation	9	Stine Company, J. C.	23
Goodman Mfg. Co.	8	Stonega Coke and Coal Co.	31
Gurney Ball Bearing Co.	21	Stonehouse Signs, Inc.	26
Hercules Powder Co.	21	Streeter-Amet Weighing & Recording Co.	10
Hockensmith Wheel & Mine Car Co.	12	Taylor Instrument Companies	21
Hoffman Brothers	26	Thorne, Neal & Co.	33
Hunt Company, Robert W.	27	Timken Roller Bearing Co.	18
Hyatt Roller Bearing Co.	Inside Front Cover	United Metals Selling Co.	27
Irvington Smelting & Refining Works	25	West Virginia Rail Co.	27
Jeffrey Mfg. Co.	Back Cover	Wilmot Engineering Co.	31

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